**Free Guide for SSC Combined Graduate Level Examination - 2012**

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SSC Combined Graduate Level Examination, 2012 Notification
Commission will be holding Combined Graduate Level Examination, 2012 for recruitment to different posts for which Graduation from a recognized University is the minimum Educational Qualification. The Examination will comprise of two Tiers of Written Objective Type examination followed by Computer Proficiency Test/ Interview/Skill test, wherever applicable as per the Scheme of Examination. Posts have been placed in two groups, inter-alia, based on their Grade Pay and papers in Tier II examination/Interview. Preference for Posts, is to be indicated in the application. Candidates are requested to note that preference for Posts once exercised will be final. Request for change of preference will not be considered under any circumstance. For the post of Assistant in CSS, candidate shall have not more than three attempts unless covered by any of the exceptions notified by Government of India.

Names & Codes of Posts, Classification, Pay Band and Grade Pay, Nature of Physical Disabilities permissible for the posts are:

**Posts for which Interview cum Personality Test is prescribed: Pay Band –II f 9300-34800:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Post</th>
<th>Ministries/Departments/Offices/ Cadre</th>
<th>Classification</th>
<th>Grade Pay (GP)</th>
<th>Nature of Physical Disabilities permissible for the post</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Assistant</td>
<td>Central Secretariat Service</td>
<td>Group “B”</td>
<td>4600</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Assistant</td>
<td>Central Vigilance Commission</td>
<td>Group “B”</td>
<td>4600</td>
<td>One Leg (OL), Both Legs &amp; Arms (BLA), One Arm (OA), Partially Deaf (PD), Partially Blind (PB), Blind (B)</td>
</tr>
<tr>
<td>C</td>
<td>Assistant</td>
<td>Intelligence Bureau</td>
<td>Group “B”</td>
<td>4600</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Assistant</td>
<td>Ministry of Railway</td>
<td>Group “B”</td>
<td>4600</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Assistant</td>
<td>Ministry of External Affairs</td>
<td>Group “B”</td>
<td>4600</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Assistant (Cypher)</td>
<td>Ministry of External Affairs</td>
<td>Group “B”</td>
<td>4600</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Assistant</td>
<td>Ministry of Defence</td>
<td>Group “B”</td>
<td>4600</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>Assistant</td>
<td>Other Ministries/Departments/Organisations including AFHQ</td>
<td>Group “B”</td>
<td>4200</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>Inspector of Income Tax</td>
<td>CBDT</td>
<td>Group “C”</td>
<td>4600</td>
<td>OA, OL, BL, OAL ,HH*</td>
</tr>
<tr>
<td>J</td>
<td>Inspector, (Central Excise)</td>
<td>CBEC</td>
<td>Group “B”</td>
<td>4600</td>
<td>One Leg/one arm affected/one arm &amp; one leg affected, Partially hearing</td>
</tr>
</tbody>
</table>
**Guidance Programme for SSC CGL Exam 2012:**
[http://sscportal.in/community/guidance-programme/cgl](http://sscportal.in/community/guidance-programme/cgl)

<table>
<thead>
<tr>
<th>K</th>
<th>Inspector (Preventive Officer)</th>
<th></th>
<th>Group “C”</th>
<th>4600</th>
<th>impaired with assistive devices.</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>Inspector (Examiner)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>Assistant Enforcement Officer</td>
<td>Directorate of Enforcement, Department of Revenue</td>
<td>Group “C”</td>
<td>4600</td>
<td>Post not identified suitable for PH candidates.</td>
</tr>
<tr>
<td>N</td>
<td>Sub Inspectors</td>
<td>Central Bureau of Investigation</td>
<td>Group C’’</td>
<td>4200</td>
<td>Post not identified suitable for PH candidates.</td>
</tr>
<tr>
<td>O</td>
<td>Inspector of Posts</td>
<td>Department of Post</td>
<td>Group “B”</td>
<td>4200</td>
<td>Post not identified suitable for PH candidates</td>
</tr>
<tr>
<td>P</td>
<td>Divisional Accountant</td>
<td>Offices under CAG</td>
<td>Group C’’</td>
<td>4200</td>
<td>One Leg (OL) Partially Deaf (PD) /Deaf(D)</td>
</tr>
<tr>
<td>Q</td>
<td>Statistical Investigator Gr.II</td>
<td>M/Statistics &amp; Prog Implementation.</td>
<td>Group “B”</td>
<td>4200</td>
<td>Post not identified suitable for PH candidate</td>
</tr>
</tbody>
</table>

II. Posts for which Interview cum Personality Test is NOT prescribed: Pay Band-I: f 5200-20200

| R | Auditor | Offices under C&AG | Group C’’ | 2800 | One Arm (OA), One Leg (OL) |
| S | Auditor | Offices under CGDA | Group C’’ | 2800 | |
| T | Auditor | Offices under CGA & others | Group C’’ | 2800 | |
| U | Accountant/ Junior Accountant | Offices under C&AG | Group C’’ | 2800 | One Leg (OL) ,Partially Deaf(PD),Deaf(D) |
| V | Accountant/ Junior Accountant | Offices under CGA & others | Group C’’ | 2800 | |
| W | Upper Division Clerk | Central Govt. Offices/Ministries other than CSCS cadres. | Group C’’ | 2400 | Both Leg(BL)/ One Leg (OL)/ Partially Deaf (PD) /Deaf(D) Partially Blind (PB), Blind (B)/One Arm (OA) |
| X | Tax Assistant | CBDT | Group C’’ | 2400 | Both Leg(BL)/ One Leg (OL)/ Partially Deaf (PD) /Deaf(D) Partially Blind (PB), Blind (B)/One Arm (OA) |
| Y | Tax Assistant | CBEC | Group C’’ | 2400 | |
| Z | Compiler | Registrar General of India | Group “C” | 2400 | One Leg (OL) ,One Arm |

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(OA), Partially Deaf (PD)


**Important Links:**

- **SSC: Combined Graduate Level Examination : Syllabus of Examination**
  http://www.sscportal.in/community/syllabus/ssc-cgl-exam-2012

- **SSC: Combined Graduate Level Examination : Exam Pattern**
  http://www.sscportal.in/community/exam-pattern/ssc-cgl-exam-2012

**IMPORTANT INSTRUCTIONS TO CANDIDATES**

1. Commission will be holding Combined Graduate Level Examination, 2012 for recruitment to different posts for which Graduation from a recognized University is the minimum Educational Qualification. The Examination will comprise of two Tiers of Written Objective Type examination followed by Computer Proficiency Test/ Interview/Skill test, wherever applicable as per the Scheme of Examination. Posts have been placed in two groups, inter-alia, based on their Grade Pay and papers in Tier II examination/Interview. Preference for Posts, is to be indicated in the application. Candidates are requested to note that preference for Posts once exercised will be final. Request for change of preference will not be considered under any circumstance. For the post of Assistant in CSS, candidate shall have not more than three attempts unless covered by any of the exceptions notified by Government of India.

2. In view of the huge number of applicants, scrutiny of the eligibility category etc. will not be undertaken at the time of Tier-I and Tier-II examination . Therefore, the application will be accepted provisionally only. The candidates are advised to go through the requirements of educational qualification, age, physical standards etc and satisfy themselves that they are eligible, before applying and before indicating their preference for any particular post. Copies of supporting documents will be sought only from those candidates who appear in Tier-II examination at the time of interview/skill test/document verification. Candidature will be cancelled if any information or claim is not found substantiated when the scrutiny of documents is undertaken by the Commission after Tier-II of the Examination. Commission’s decision shall be final in this regard.

3. **CANDIDATES IN THEIR OWN INTEREST ARE ADVISED TO GO THROUGH THE DETAILED INSTRUCTIONS CONTAINED IN THIS NOTICE, WHICH IS ALSO AVAILABLE ON THE WEBSITE OF THE COMMISSION: http://ssc.nic.in, CAREFULLY BEFORE APPLYING.**

4. Candidates seeking reservation benefits for SC/ST/OBC/ minority OBC sub-quota /PH/EXS must ensure that they are entitled to such reservation as per eligibility prescribed in the Notice .They should also be in possession of the required certificates in the prescribed format in support of their
Candidates with visual disability of 40% and more will only be considered as VISUALLY HANDICAPPED and entitled to reservation for VH candidates, wherever such reservation is available.

Central Government civilian employees claiming age relaxation should produce a certificate in the prescribed format from their office, in respect of the length of continuous service which should be for not less than three years during the period immediately preceding the closing date for receipt of application at the time of Interview/skill Test/document verification. They should remain Central Government civilian employees till the time of appointment, in the event of their selection.

Women candidates and candidates belonging to Scheduled Caste, Scheduled Tribe, Physically Handicapped, and Ex-Servicemen eligible for reservation are exempted from paying application fee as per extant Government orders.

CLOSING DATE: 20.04.2012. For candidates residing in Assam, Meghalaya, Arunachal Pradesh, Mizoram, Manipur, Nagaland, Tripura, Sikkim, Jammu and Kashmir, Lahaul and Spiti District and Pangi Sub Division of Chamba District of Himachal Pradesh, Andaman and Nicobar Islands, Lakshadweep and for candidates residing abroad – 27.04.2012. APPLICATIONS RECEIVED LATE WILL BE REJECTED and no correspondence will be entertained in this regard. COMMISSION WILL NOT BE RESPONSIBLE FOR POSTAL DELAY.

Only one application, either a paper application or online application is to be submitted by the candidates to the concerned Regional/Sub-Regional office of the Commission keeping in view the Centre of examination chosen by him/her. IN CASE ANY CANDIDATE SUBMITS MORE THAN ONE APPLICATION, ALL HIS APPLICATIONS AND HIS CANDIDATURE WILL BE SUMMARILY REJECTED.

MOBILE PHONE AND OTHER ELECTRONIC GADGETS ARE BANNED WITHIN THE PREMISES OF THE EXAMINATION CENTRES. POSSESSION OF SUCH EQUIPMENT WHETHER IN USE OR IN SWITCH OFF MODE, DURING THE EXAMINATION WILL BE CONSIDERED AS USE OF UNFAIR MEANS. CANDIDATURE OF SUCH CANDIDATES WILL BE CANCELLED. THEY WILL BE LIABLE FOR FURTHER ACTION AS MAY BE DECIDED BY THE COMMISSION.

CANDIDATES MAY SUBMIT ON LINE APPLICATIONS AT http://ssconline.nic.in or http://www.sscregistration.sifyitest.com THEY SHOULD RETAIN REGISTRATION NUMBER ASSIGNED TO THEM ON LINE FOR CORRESPONDENCE WITH THE COMMISSION. THEY ARE NOT REQUIRED TO SUBMIT PRINT OUTS OF THEIR APPLICATION TO THE COMMISSION. THE FACILITY OF ON-LINE APPLICATION WILL BE AVAILABLE UPTO 17.04.2012 (5:00 PM) FOR PART-I REGISTRATION AND FOR PART-II REGISTRATION UPTO 20.04.2012
Candidates may contact following Regional Help Lines for clarifications, if any, in respect of filling/submitting applications:
(i) SSC(NR), New Delhi - 01164715222, 01165570666
(ii) SSC(CR), Allahabad - 08765214571, 08765214572
(iii) SSC(SR), Chennai - 09445195946, 04428251139
(iv) SSC(WR), Mumbai - 09869730700, 07738422705
(v) SSC(ER), Kolkata - 09477461228, 09477461229
(vi) SSC(MPR) Raipur - 09407921504, 09407921505
(vii) SSC(KKR), Bangalore - 09483862010, 09483862020
(viii) SSC(NWR), Chandigarh - 01722749378, 01722742144
(ix) SSC(NER), Guwahati, - 09864217001, 09435711335

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Important Dates:
- Date of Exam: 01.07.2012 & 08.07.2012
- Closing Date: 20.04.2012
A. General Intelligence & Reasoning:

It would include questions of both verbal and non-verbal type. This component may include questions on analogies, similarities and differences, space visualization, spatial orientation, problem solving, analysis, judgement, decision making, visual memory, discrimination, observation, relationship concepts, arithmetical reasoning and figural classification, arithmetic number series, non-verbal series, coding and decoding, statement conclusion, syllogistic reasoning etc. The topics are, Semantic Analogy, Symbolic/Number Analogy, Figural Analogy, Semantic Classification, Symbolic/Number Classification, Figural Classification, Semantic Series, Number Series, Figural Series, Problem Solving, Word Building, Coding & de-coding, Numerical Operations, symbolic Operations, Trends, Space Orientation, Space Visualization, Venn Diagrams, Drawing inferences, Punched hole/pattern –folding & un-folding, Figural Pattern – folding and completion, Indexing, Address matching, Date & city matching, Classification of centre codes/roll numbers, Small & Capital letters/numbers coding, decoding and classification, Embedded Figures, Critical thinking, Emotional Intelligence, Social Intelligence, Other sub-topics, if any.

B. General Awareness:

Questions in this component will be aimed at testing the candidates general awareness of the environment around him and its application to society. Questions will also be designed to test knowledge of current events and of such matters of every day observations and experience in their scientific aspect as may be expected of any educated person. The test will also include questions relating to India and its neighbouring countries especially pertaining History, Culture, Geography, Economic Scene, General Policy & Scientific Research.

C. Quantitative Aptitude:

The questions will be designed to test the ability of appropriate use of numbers and number sense of the candidate. The scope of the test will be computation of whole
numbers, decimals, fractions and relationships between numbers, Percentage, Ratio & Proportion, Square roots, Averages, Interest, Profit and Loss, Discount, Partnership Business, Mixture and Alligation, Time and distance, Time & Work, Basic algebraic identities of School Algebra & Elementary surds, Graphs of Linear Equations, Triangle and its various kinds of centres, Congruence and similarity of triangles, Circle and its chords, tangents, angles subtended by chords of a circle, common tangents to two or more circles, Triangle, Quadrilaterals, Regular Polygons, Circle, Right Prism, Right Circular Cone, Right Circular Cylinder, Sphere, Hemispheres, Rectangular Parallelepiped, Regular Right Pyramid with triangular or square base, Trigonometric ratio, Degree and Radian Measures, Standard Identities, Complementary angles, Heights and Distances, Histogram, Frequency polygon, Bar diagram & Pie chart.

D. English Comprehension:

Candidates’ ability to understand correct English, his basic comprehension and writing ability, etc. would be tested.

The questions in Posts A, B & D will be of a level commensurate with the Essential Qualification prescribed for the post viz graduation and questions in Part C will be of 10+2 level.

Tier - II

Paper-I: Quantitative Ability: The questions will be designed to test the ability of appropriate use of numbers and number sense of the candidate. The scope of the test will be the computation of whole numbers, decimals, fractions and relationships between numbers, Percentage, Ratio & Proportion, Square roots, Averages, Interest, Profit and Loss, Discount, Partnership Business, Mixture and Alligation, Time and distance, Time & Work, Basic algebraic identities of School Algebra & Elementary surds, Graphs of Linear Equations, Triangle and its various kinds of centres, Congruence and similarity of triangles, Circle and its chords, tangents, angles subtended by chords of a circle, common tangents to two or more circles, Triangle, Quadrilaterals, Regular Polygons, Circle, Right Prism, Right Circular Cone, Right Circular Cylinder, Sphere, Hemispheres, Rectangular Parallelepiped, Regular Right Pyramid with triangular or square base, Trigonometric ratio, Degree and Radian Measures, Standard Identities, Complementary angles, Heights and Distances, Histogram, Frequency polygon, Bar diagram & Pie chart.

Paper-II: English Language & Comprehension: Questions in this components will be designed to test the candidate’s understanding and knowledge of English Language and will be based on spot the error, fill in the blanks, synonyms, antonyms, spelling/detecting mis-spelt words, idioms & phrases, one word substitution, improvement of sentences, active/passive voice of verbs, conversion into direct/indirect narration, shuffling of sentence parts, shuffling of sentences in a passage, cloze passage & comprehension passage.

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Paper-III : Statistics for Investigator Grade-II, Ministry of Statistics & Programme Implementation & Compiler in RGI. Collection Classification and Presentation of Statistical Data – Primary and Secondary data, Methods of data collection; Tabulation of data; Graphs and charts; Frequency distributions; Diagrammatic presentation of frequency distributions.

- Measures of Central Tendency- Common measures of central tendency – mean median and mode; Partition values- quartiles, deciles, percentiles.
- Measures of Dispersion- Common measures dispersion – range, quartile deviations, mean deviation and standard deviation; Measures of relative dispersion.
- Moments, Skewness and Kurtosis – Different types of moments and their relationship; meaning of skewness and kurtosis; different measures of skewness and kurtosis.
- Correlation and Regression – Scatter diagram; simple correlation coefficient; simple regression lines; Spearman’s rank correlation; Measures of association of attributes; Multiple regression; Multiple and partial correlation (For three variables only).
- Probability Theory – Meaning of probability; Different definitions of probability; Conditional probability; Compound probability; Independent events; Bayes’ theorem.
- Random Variable and Probability Distributions – Random variable; Probability functions; Expectation and Variance of a random variable; Higher moments of a random variable; Binomial , Poisson, Normal and Exponential distributions; Joint distribution of two random variable (discrete).
- Sampling Theory – Concept of population and sample; Parameter and statistic, Sampling and non-sampling errors; Probability and non-probability sampling techniques(simple random sampling, stratified sampling, multistage sampling, multiphase sampling, cluster sampling, systematic sampling, purposive sampling, convenience sampling and quota sampling); Sampling distribution(statement only); Sample size decisions.
- Statistical Inference - Point estimation and interval estimation, Properties of a good estimator, Methods of estimation (Moments method, Maximum likelihood method, Least squares method), Testing of hypothesis, Basic concept of testing, Small sample and large sample tests, Tests based on Z, t, Chi-square and F statistic, Confidence intervals.
- Analysis of Variance - Analysis of one-way classified data and two-way classified data.
- Time Series Analysis - Components of time series, Determinations of trend component by different methods, Measurement of seasonal variation by different methods.
- Index Numbers - Meaning of Index Numbers, Problems in the construction of index numbers, Types of index number, Different formulae, Base shifting and splicing of index numbers, Cost of living Index Numbers, Uses of Index Numbers.
NOTE- I: (i) The Commission will have full discretion to fix separate minimum qualifying marks in each of the papers in Tier II and in the aggregate of all the papers separately for each category of candidates (viz. SC/ST/OBC/ including minority sub-quota /PH/ExS/General (UR) ). Only those candidates who qualify in all the papers as well as in the aggregate would be eligible to be considered for being called for Interview and/or Skill Test.

(ii) There will be different set of Questions for Visually Handicapped (VH) candidates in Paper-I-Quantitative Ability, which shall not have any component of Map/Graphs/Statistical Data/ Diagrams/ Figures/Geometrical problems/Pie-chart etc. However, components of other papers will be the same as that for general candidates.

Personality Test/Interview

For posts for which Interview cum Personality Test is prescribed, the Personality Test/ interview will carry a maximum of 100 marks.

NOTE-I: The interview will be held at the Commission’s Regional /Sub Regional Offices of the Commission or at any other place as decided by the Commission.

NOTE-II: SC/ST candidates called for interview will be paid TA as per Govt. Orders. However, no TA is payable to any candidate for appearing in the written examination.

NOTE-III: Canvassing in any form will disqualify the candidate.

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TOPIC WISE
SAMPLE
PRACTICE
QUESTIONS
GENERAL INTELLIGENCE &
REASONING (VERBAL)

ALPHABET TEST

Directions (Q. No. 1-10): In each of the following Questions, five words are given which of them will come in the middle if all of them are arranged alphabetically as in a dictionary?

1. (a) Bishop  (b) Bifocal  
   (c) Bicycle  (d) Bitter
2. (a) Parasite  (b) Party  
   (c) Petal  (d) Paste
3. (a) Research  (b) Rational  
   (c) Round  (d) Rustic
4. (a) Nature  (b) Native  
   (c) Narrate  (d) Diastole
5. (a) Didactic  (b) Dictum  
   (c) Dictionary  (d) Diastole

ANSWERS

1. (a)  2. (d)  3. (d)  4. (b)  5. (c)

Classification Test

Directions (Q. No. 1-10): Choose the word which is look like the other words in the group

1. (a) House  (b) Cottage  
   (c) School  (d) Palace
2. (a) Tamato  (b) Cucumber  
   (c) Brinjal  (d) Carrot
3. (a) Brick  (b) Heart  
   (c) Bridge  (d) Spade
4. (a) Hostel  (b) Hotel  
   (c) Inn  (d) Club
5. (a) Kennel  (b) House  
   (c) Stable  (d) Aviary

ANSWERS

1. (c)  2. (d)  3. (a)  4. (d)  5. (b)

Logical Sequence of Words

Directions (Q. No. 1-20): Sequence of occurrence of events or various stages in a process:

1. 1. Curd  2. Grass  
   (a) 2, 5, 4, 3, 1  (b) 4, 2, 5, 3, 1  
   (c) 5, 2, 3, 4, 1  (d) 5, 2, 4, 1, 3
2. 1. Heel  2. Shoulder  
   7. Thigh  8. Stomach  
   9. Face  10. Hand  
   (a) 2, 4, 7, 10, 1, 5, 8, 9, 6, 3  
   (b) 3, 4, 7, 9, 2, 5, 8, 10, 6, 1  
   (c) 4, 7, 10, 1, 9, 6, 3, 2, 5, 8  
   (d) 3, 9, 4, 2, 10, 6, 8, 7, 5, 1
3. 1. Butterfly  2. Cocoon  
   3. Egg  4. Work  
   (a) 1, 3, 4, 2  (b) 1, 4, 3, 2  
   (c) 2, 4, 1, 3  (d) 3, 4, 2, 1
4. 1. Rainbow  2. Rain  
   5. Child  
   (a) 2, 1, 4, 3, 5  (b) 2, 3, 1, 5, 4  
   (c) 4, 2, 3, 5, 1  (d) 4, 5, 1, 2, 3

ANSWERS

1. (c)  2. (d)  3. (a)  4. (d)  5. (b)

Analogy

Directions (Q. No. 1-20): In each of the following Questions, there is a certain relationship between two given words on one side of :: and one word is given on another side of :: while another word is to be found from the given alternatives, having the same relation with this word as the words of the given pair bear: choose the correct alternatives.

1. Aeroplane : Cockpit :: Train : ?
   (a) Wagon   (b) Coach
   (c) Compartment   (d) Engine
2. Amnesia : Memory :: Paralysis : ?
   (a) Movement   (b) Limbs
   (c) Handicapped   (d) Legs
3. Meningitis : Brain :: Cirrhosis : ?
   (a) Lungs   (b) Brain
   (c) Liver   (d) Heart
4. Book : Publisher :: Film : ?
   (a) Producer   (b) Director
   (c) Editor   (d) Writer
5. Forecast : Future :: Regret : ?
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Series Completion

Directions (Q. No. 1-10): Find the missing term in each of the following series:

1. 625, 5, 125, 25, 25, ?, 5
   (a) 5  (b) 25  (c) 125  (d) 625
2. 3, 4, 7, 7, 13, 21, 22, 31, 34, ?
   (a) 42  (b) 43  (c) 51  (d) 52
3. 11, 10, ?, 100, 1001, 1000, 10001
   (a) 101  (b) 110  (c) 111  (d) 113
4. 13, 32, 24, 43, 35, ?, 46, 65, 57, 76
   (a) 45  (b) 52  (c) 54  (d) 55
5. 0, 4, 6, 3, 7, 9, 6, ?, 12
   (a) 8  (b) 10  (c) 11  (d) 14

Coding-Decoding

1. In a certain code LAWN is written as JCUP. How will SLIT be coded in that code?
   (a) QNGV  (b) QJGV  (c) QNVG  (d) NJGV
2. In a certain code SATELLITE is written as FUBHTLDHK. How is LAUNCHING written in that code?
   (a) DOUBFMGHO  (b) OVBMCFMHG  (c) OVMBCFMGH  (d) DOUBCFMHG
3. In a certain code LOUD is written as JOSF then which of the following English words shall be coded as PKQG?
   (a) RISE  (b) ROPE  (c) ROAD  (d) RICE
4. In a certain code BREAKDOWN is written as BFSCJMVNRC. How is ORGANISED written in that code?
   (a) PSHBMCDRH  (b) BHSPMCDRH  (c) BHSPOCDRH  (d) BHSPNHRDC
5. In a certain code CONCISE is written as FTJBBNRM. How is FISHERY written in that code?
   (a) ZSFIGJT  (b) ZSFGIHR  (c) ZSFGEHR  (d) ZSFEHGR

Blood Relation

1. Pointing to a woman, Naman said, "She is the daughter of the only child of my grandmother." How is the woman related to Naman?
   (a) Sister  (b) Niece  (c) Cousin  (d) Data inadequate
2. Pointing to a photograph, a person tells his friend, "She is the grand daughter of the elder brother of my father." How is the girl in the photograph related to this man?
   (a) Niece  (b) Sister  (c) Aunt  (d) Sister-in-law
3. A man said to a lady, "Your mother's husband's sister is my aunt." How is the lady related to the man?
   (a) Daughter  (b) Grand daughter  (c) Mother  (d) Sister
4. If Neena says, "Anita's father Raman is the only son of my father-in-law Mahipal", then how is Bindu, who is the sister of Anita, related to Mahipal?
   (a) Niece  (b) Daughter  (c) Wife  (d) None of these
5. Pointing to the woman in the picture, Rajiv said, "Her mother has only one grandchild whose mother is my wife." How is the woman in the picture related to Rajiv?
   (a) Cousin  (b) Wife  (c) Sister  (d) Data inadequate

Direction Sense Test

1. A man walks 1 km towards East and then he turns to South and walks 5 km. Again he turns to East and walks 2 km, after this he turns to North and walks 9 km. Now, how far is he from his starting point?
   (a) 3 km  (b) 4 km  (c) 5 km  (d) 7 km
2. Raj travelled from a point X straight to Y at a distance of 80 metres. He turned right and walked 50 metres, then again turned right and

2. Laxman went 15 kms to the west from my house, then turned left and walked 20 kms. He then turned East and walked 25 kms and finally turning left covered 20 kms. How far was he from his house?
   (a) 5 kms  (b) 10 kms  (c) 40 kms  (d) 80 kms

3. From his house, Lokesh went 15 kms to the North. Then he turned West and covered 10 kms. Then, he turned South and covered 5 kms. Finally, turning to East, he covered 10 kms. In which direction is he from his house?
   (a) East  (b) West  (c) North  (d) South

4. Going 50 m to the South of her house, Radhika turns left and goes another 20 m. Then, turning to the North, she goes 30 m and then starts walking to her house. In which direction is she walking now?
   (a) North-west  (b) North  (c) South-east  (d) East

**ANSWERS**

1. (c) 2. (a) 3. (b) 4. (c) 5. (a)

**Alpha-Numeric Sequence Test**

Directions (Q. No. 1 to 5): These questions are based on the following arrangement:

J Y 2 = S £ ξ E G M ⊙ 7 H P 9 K L β @ W Q 1 3 # C D Ó

1. How many such symbols are there in the above arrangement each of which is either immediately followed by a number or immediately preceded by a letter, but not both?
   (a) Nil  (b) One  (c) Two  (d) Three

2. How many such letters are there in the above arrangement each of which is either immediately followed by a number or immediately preceded by a symbol, but not both?
   (a) Four  (b) Five  (c) Six  (d) None of these

3. How many such letters are there in the above arrangement each of which is either immediately followed by a number or immediately preceded by a symbol, but not both?
   (a) Two  (b) Three  (c) Four  (d) Five

**ANSWERS**

1. (c) 2. (a) 3. (b) 4. (c) 5. (a)

**Mathematical Operations**

1. If + means ÷, ÷ means –, – means ×, × means +, then 12 + 6 ÷ 3 – 2 × 8 = ?
   (a) –2  (b) 2  (c) 4  (d) 8

**Number, Ranking and Time Sequence Test**

1. If the positions of the first and the sixth digits of the number 276543018 are interchanged, similarly the positions of the second and the seventh digits are interchanged and so on, which of the following will be the third to the left of seventh digit from the left end?
   (a) 0  (b) 1  (c) 7  (d) 8

2. What will be the difference between the sum of the odd digits and the sum of the even digits in the number 857423?
   (a) 0  (b) 1  (c) 2  (d) None of these

3. If each of the odd digits in the number 54638 is decreased by 1 and each of the even digits is increased by 1, then which of the following will be the sum of the digits of the new number?
   (a) 25  (b) 26  (c) 28  (d) 29

4. How many times will you write even numerals if you write all the numbers from 291 to 300?
   (a) 11  (b) 13  (c) 15  (d) 17

5. A number is greater than 3 but less than 8. Also, it is greater than 6 but less than 10. The number is?
   (a) 5  (b) 6  (c) 7  (d) 8

**ANSWERS**

1. (b) 2. (b) 3. (d) 4. (b) 5. (c)
2. If + means −, − means ×, ÷ means + and × means ÷, then 15 – 3 + 10 × 5 ÷ 5 = ?
   (a) 5  (b) 22  (c) 48  (d) 52

3. If × means +, − means ÷, + means and ÷ means −, then (3 – 15 ÷ 19) × 8 + 6 = ?
   (a) −1  (b) 2  (c) 4  (d) 8

4. If × means +, + means −, − means × and ÷ means −, then 8 × 7 – 8 + 40 ÷ 2 = ?
   (a) 1  (b) 7  (c) 8  (d) 44

5. If × means −, + means ÷, − means × and ÷ means +, then 15 – 2 ÷ 900 + 90 × 100 = ?
   (a) 190  (b) 180  (c) 90  (d) None of these

ANSWERS
1. (c) 2. (c) 3. (b) 4. (b) 5. (d)

Puzzle Test

Directions (Q. No. 1-5): Study the given information carefully and answer the questions that follow:

(i) A, B, C, D, E, F and G are sitting on a wall and all of them are facing east.
(ii) C is on the immediate right of D.
(iii) B is at an extreme end and has E as his neighbour.
(iv) G is between E and F.
(v) D is sitting third from the south end.

1. Who is sitting to the right of E?
   (a) A  (b) C  (c) D  (d) F

2. Which of the following pairs of people are sitting at the extreme ends?
   (a) AB  (b) AE  (c) CD  (d) FB

3. Name the person who should change place with C such that he gets the third place from the north end.
   (a) E  (b) F  (c) G  (d) D

4. Immediately between which of the following pairs of people is D sitting?
   (a) AC  (b) AF  (c) CE  (d) CF

5. Which of the conditions (i) to (v) given above is not required to find out the place in which A is sitting?
   (a) (i)  (b) (ii)

ANSWERS
1. (d) 2. (a) 3. (c) 4. (d) 5. (b)

Logical Venndiagram

Directions (Q. No. 1-5): In the following diagram, the circle represents College Professors, the triangle stands for Surgical Specialists, and Medical Specialists are represented by the rectangle.

1. College Professors who are also Surgical Specialists are represented by
   (1) A  (b) B  (c) C  (d) D

2. Surgical Specialists who are also Medical Specialists but not Professors are represented by
   (a) B  (b) X  (c) X  (d) Z

3. C represents
   (a) Medical Specialists  (b) College Professors  (c) Surgical Specialists  (d) Medical and Surgical Specialists

4. B represents
   (a) Professors who are neither Medical nor Surgical Specialists  (b) Professors who are not Surgical Specialists  (c) Medical Specialists who are neither Professors nor Surgical Specialists  (d) Professors who are not Medical Specialists

5. College Professors who are also Medical Specialists are represented by
   (a) A  (b) X  (c) Y  (d) Z

ANSWERS
1. (d) 2. (d) 3. (c) 4. (c) 5. (b)
**Syllogism**

Directions (Q. No. 1-20): In each of the questions below are given three statements followed by three conclusions numbered I, II and III. You have to take the given statements to be true even if they seem to be at variance from the commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

1. **Statements:**
   - All dolls are windows.
   - All bottles are windows.
   - All cars are bottles.

   **Conclusions:**
   - I. All cars are windows.
   - II. Some cars are dolls.
   - III. Some windows are cars.

   (a) Only I and II follow  
   (b) Only II and III follow  
   (c) Only I and III follow  
   (d) All follow

2. **Statements:**
   - All fruits are vegetables.
   - All pens are vegetables.
   - All vegetables are rains.

   **Conclusions:**
   - I. All fruits are rains.
   - II. All pens are rains.
   - III. Some rains are vegetables.

   (a) None follows  
   (b) Only I and II follow  
   (c) Only II and III follow  
   (d) All follow

3. **Statements:**
   - All snakes are trees.
   - Some trees are roads.
   - All roads are mountains.

   **Conclusions:**
   - I. Some mountains are snakes.
   - II. Some roads are snakes.
   - III. Some mountains are trees.

   (a) Only I follows  
   (b) Only II follows  
   (c) Only III follows  
   (d) Both I and II follow

4. **Statements:**
   - Some saints are balls.
   - All balls are bats.
   - Some tigers are balls.

   **Conclusions:**
   - I. Some bats are tigers.
   - II. Some saints are bats.
   - III. All bats are balls.

   (a) Only I and II follow  
   (b) Only II follows  
   (c) Only I and III follow  
   (d) Only III follows

5. **Statements:**
   - Some hills are rivers.
   - Some rivers are deserts.
   - All deserts are roads.

   **Conclusions:**
   - I. Some roads are rivers.
   - II. Some roads are hills.

   (a) None follows  
   (b) Only I follows  
   (c) Only I and II follow  
   (d) Only II and III follow

**Answers:**

1. (c)  
2. (d)  
3. (c)  
4. (a)  
5. (b)
Data Sufficiency

Directions (Q. No. 1-10) : Each of the Questions below consists of a Question and two statements numbered I and II given below it. You have to decide whether the data Provided in the statements are sufficient to answer the Questions.

Read both statements and give answer.

(a) If the data in statement I alone are sufficient to answer the Question, while the data in statement II alone are not sufficient to answer the Question.
(b) If the data in statement II alone are sufficient to answer the Question, while the data in statement I alone are not sufficient to answer the Question.
(c) If the data either in statement I alone or in statement II alone are sufficient to answer the Question.
(d) If the data given in both statements I and II together are not sufficient to answer the Question; and
(d) If the data in both statements I and II together are necessary to answer the Question.

1. Among A, B, C, D, E and F, who is the heaviest?
   I. A and D are heavier than B, E and F but none of them is the heaviest.
   II. A is heavier than D but lighter than C.

2. Madan is taller than Kamal and Sharad is younger than Arvind. Who among them is the youngest?
   I. Sharad is younger than Madan.
   II. Arvind is younger than Kamal.

3. Among five friends, who is the tallest?
   I. D is taller than A and C.
   II. B is shorter than E but taller than D.

4. Manoj, Prabhakar, Akash and Kamal are four friends. Who among them is the heaviest?
   I. Prabhakar is heavier than Manoj and Kamal but lighter than Akash.
   II. Manoj is lighter than Prabhakar and Akash.

5. On a T.V. channel, four serials A, B, C and D were screened, one on each day, on four consecutive days but not necessarily in that order. On which day was the serial C screened?
   I. The first serial was screened on 23rd Tuesday and was followed by serial D.
   II. Serial A was not screened on 25th and one serial was screened between serials A and B.

ANSWERS
1. (b) 2. (a) 3. (c) 4. (c) 5. (c)
GENERAL INTELLIGENCE & REASONING (NON-VERBAL)

Series

Directions (Q. No. 1-40): Each of the following questions consists of five figures called the problem figures followed by five other figures marked a, b, c, d. Select a figure from amongst the answer figures, which will continue the same series as established by the five problem figures.

1. Problem figures

2. Problem figures

3. Problem figures

4. Problem figures

5. Problem figures

Answer figures

Answers

1. (b) 2. (c) 3. (b) 4. (b) 5. (d)

Analogy

Directions (Q. No. 1-40): Each of the following questions consists of two sets of figures. Figures A, B, C and D constitute the problem set while figures a, b, c, d. There is a definite relationship between figures A and B. Establish a similar relationship between figures C and D by selecting a suitable figure from the answer set that would replace the question mark (?) in figure (D).

1. Problem figures

2. Problem figures

Answer figures

Answer figures

Answer figures
3. Problem figures
   \[ \begin{array}{c}
   (a) \ \ \ \ \ \ (b) \\
   \end{array} \]
   Answer figures
   \[ \begin{array}{c}
   (A) \\
   (B) \\
   (C) \\
   (D) \\
   \end{array} \]

4. Problem figures
   \[ \begin{array}{c}
   \Delta \\
   \square \\
   \end{array} \]
   Answer figures
   \[ \begin{array}{c}
   (A) \\
   (B) \\
   (C) \\
   (D) \\
   \end{array} \]

5. Problem figures
   \[ \begin{array}{c}
   S \quad \square \\
   \downarrow \\
   \end{array} \]
   Answer figures
   \[ \begin{array}{c}
   (A) \\
   (B) \\
   (C) \\
   (D) \\
   \end{array} \]

**ANSWERS**

1. (a) 2. (d) 3. (d) 4. (b) 5. (a)
QUANTITATIVE APTITUDE

Number System

1. Evaluate: \[\frac{9 - 3 - 5 - 54}{10} \div 2 \times 4 + \frac{1}{2}\]
   (a) 9/10  
   (b) -8/17  
   (c) -16/19  
   (d) 4/7

2. The sum of three consecutive natural numbers each divisible by 3 is 72. What is the largest among them?
   (a) 25  
   (b) 26  
   (c) 27  
   (d) 30

3. 55% of a number is more than one-third of that number by 52. What is two-fifth of that number?
   (a) 96  
   (b) 240  
   (c) 144  
   (d) 142

4. The digits of a two-digit number are in the ratio of 2:3 and the number obtained by interchanging the digits is bigger than the original number by 27.
   What is the original number?
   (a) 63  
   (b) 48  
   (c) 96  
   (d) 69

5. What least number would be subtracted from 427398 so that the remaining number is divisible by 15?
   (a) 13  
   (b) 3  
   (c) 16  
   (d) 11

ANSWERS

1. (c) 2. (c) 3. (a) 4. (d) 5. (b)

Squares, Cubes and Indices

1. The expression \[\sqrt{\frac{0.85 \times (1.05 + 0.24 - 0.008)}{0.22 \times 0.25 \times 1.7}}\]
   simplifies to:
   (a) \(\sqrt{11}\)  
   (b) \(\sqrt{1.1}\)  
   (c) \(\sqrt{0.11}\)  
   (d) \(\sqrt{0.011}\)

2. The value of \[\frac{16 + \frac{1}{36}}{4}\]
   is:
   (a) 4/5  
   (b) 1/3

ANSWERS

1. (c) 2. (c) 3. (a) 4. (d) 5. (b)

Decimal Fractions

1. If \(\sqrt{2025} = 45\), then the value of \(\sqrt{0.00002025} + \sqrt{0.002025} + \sqrt{2025} + \sqrt{20.25}\) is:
   (a) 49.95  
   (b) 49.5495  
   (c) 4.9995  
   (d) 499.95

2. If \(\sqrt{15} = 3.88\), the the value of \(\sqrt{\frac{5}{3}}\) is:
   (a) 1.39  
   (b) 1.29  
   (c) 1.89  
   (d) 1.63

3. If 2805 ÷ 2.55 = 1100, then 280.5 ÷ 25.5 is:
   (a) 111  
   (b) 1.1  
   (c) 0.11  
   (d) 11

4. The value of 213 + 2.013 + 0.213 + 2.0013 is:
   (a) 217.2273  
   (b) 21.8893  
   (c) 217.32
(d) $3.217.32$

5. $0.05 \times 0.05 - 0.05 \times 0.04 + 0.04 \times 0.04 = ?$

(a) 0.09  
(b) 0.9  
(c) 0.009  
(d) 0.001

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**Guidance Programme for SSC CGL Exam 2012**

1. How many numbers less than 10,000 are there which are divisible by 21, 35 and 63?
   (a) 33  
   (b) 32  
   (c) 38  
   (d) 37

2. Find the side of the largest possible square slabs which can be paved on the floor of a room 2m 50 cm long and 1 m 50 cm broad. Also find the number of such slabs to pave the floor.
   (a) 40, 18  
   (b) 30, 15  
   (c) 50, 15  
   (d) 20, 25

3. What is the largest number which when divides 1475, 3155 and 5255 leaves the same remainder in each case?
   (a) 220  
   (b) 420  
   (c) 350  
   (d) 540

4. A florist has 200 roses and 180 jasmines with him. He was asked to make garlands of flowers with only roses or only jasmines each containing the same number of flowers. What will be the largest number of flowers, he can join together without leaving a single flower?
   (a) 16  
   (b) 17  
   (c) 20  
   (d) 19

5. The HCF and LCM of a pair of numbers are 12 and 926 respectively. How many such distinct pairs are possible?
   (a) 3  
   (b) 7  
   (c) 1  
   (d) 0

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**Average**

1. The average weight of 8 persons increases by 2.5 kg when a new person comes in place of one of them weighing 65 kg. What might be the weight of the new person?
   (a) 82 kg  
   (b) 85 kg  
   (c) 76.5 kg  
   (d) 80 kg

2. Sumitra has an average of 56% on her first 7 examinations. How much she should make on her eighth examination to obtain an average of 60% on 8 examinations?
   (a) 88%  
   (b) 78%  
   (c) 92%  
   (d) 68%

3. Ages of ‘A’ and ‘B’ are in the ratio of 2 : 3 respectively. Six years hence the ratio of their ages will become 8 : 11 respectively. What is B’s present age?
   (a) 18 years  
   (b) 28 years  
   (c) 27 years  
   (d) 25 years

4. The total age of A and B is 12 years more than that of total age of B and C. C is how many years younger than A?
   (a) C is elder than A  
   (b) 26  
   (c) 12  
   (d) 25

5. The average marks fetched by Mohan in History, Geography, Science and Mathematics is 10 more than the marks fetched in Mathematics. If he has got 110 marks aggregate in History and Geography, what will be the aggregate marks fetched in Science and Mathematics?
   (a) 90  
   (b) 70  
   (c) 75  
   (d) 85

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**Ratio & Proportion**

1. In a school the number of boys and that of the girls are in the respective ratio of 2 : 3 If the number of boys is increased by 20% and that of girls is increased by 10%, what will be the new ratio of number of boys to that of the girls?
   (a) 13 : 7  
   (b) 7 : 9  
   (c) 13 : 4  
   (d) 8 : 11

2. Income of two companies A and B are in the ratio of 5 : 8. Had the income of company A been more by Rs. 25 lakhs, the ratio of their incomes would have been 5 : 4 respectively. What is the income of company B?
   (a) Rs. 45 lakhs  
   (b) Rs. 80 lakhs  
   (c) Rs. 40 lakhs  
   (d) Rs. 65 lakhs

3. The ratio of males and females in a city is 7 : 8 respectively and the percentage of children among males and females is 25% and 20% respectively. If the number of adult females in the city is 1,56,800, what is the total population?
   (a) 3,01,000  
   (b) 3,57,500  
   (c) 3,96,000  
   (d) 2,71,500

4. A sum of money is to be distributed among P, Q and R in the ratio 6 : 19 : 7. If R gives Rs. 200 from his share to Q, the ratio of P, Q and R becomes 3 : 10 3 what is the total sum?
   (a) Rs. 6400  
   (b) Rs. 4800  
   (c) Rs. 3200  
   (d) Rs. 3600
5. A total of 91 boys are seated in three rows. The ratio between the number of boys seated in the first and the second row is 5 : 2 respectively and the ratio between the number of boys seated in the second and the third row is 1 : 3 respectively. How many boys were there in the second row?
(a) 24  
(b) 14  
(c) 42  
(d) 60

ANSWERS
1. (d)  2. (b)  3. (d)  4. (b)  5. (a)

Problems on Ages

1. Six years ago, the ratio of the ages of Kunal and Sagar was 6 : 5. Four years hence, the ratio of their ages will be 11 : 10. What is Sagar’s age at present?
(a) 16 years  
(b) 19 years  
(c) 22 years  
(d) 25 years

2. The total of the ages of Jayant, Prem and Saransh is 93 years. Ten years ago, the ratio of their ages was 2 : 3 : 4. What is the present age of Saransh?
(a) 44 years  
(b) 36 years  
(c) 33 years  
(d) 38 years

3. The ratio of the present ages of two brothers is 1 : 2 and 5 years back, the ratio was1 : 3. What will be the ratio of their ages after 5 years?
(a) 3 : 4  
(b) 3 : 2  
(c) 3 : 5  
(d) 5 : 6

4. Hitesh is 40 years old and Ronnie is 60 years old. How many years ago was the ratio of their ages 3 : 5?
(a) 2 years  
(b) 10 years  
(c) 30 years  
(d) 47 years

5. The ratio of the father’s age to his son’s age is 7 : 3. The product of their ages is 756. The ratio of their ages after 6 years will be:
(a) 6 : 7  
(b) 2 : 1  
(c) 10 : 9  
(d) 3 : 2

ANSWERS
1. (a)  2. (d)  3. (b)  4. (b)  5. (b)

Percentage

1. The difference of two numbers is 20% of the larger number. If the smaller number is 20, then the larger number is:
(a) 25  
(b) 46  
(c) 27  
(d) 82

2. When any number is divided by 12, then dividend becomes 1/4th of the other number. By how much percent first number is greater than the second number?
(a) 165  
(b) 200  
(c) 300  
(d) 400

3. If one number is 80% of the other and 4 times the sum of their squares is 656, then the numbers are:
(a) 6,8  
(b) 8,10
4. Two numbers A and B are such that the sum of 5% of A and 4% of B is two-thirds of the sum of 6% of A and 8% of B. Find the ratio of A : B.
(a) 1 : 2  
(b) 3 : 1  
(c) 3 : 4  
(d) 4 : 3

5. Three candidates contested an election and received 1136, 7636 and 11628 votes respectively. What percentage of the total votes did the winning candidate get?
(a) 57%  
(b) 77%  
(c) 80%  
(d) 90%

**Answers**
1. (a)  
2. (b)  
3. (b)  
4. (d)  
5. (a)

**Profit & Loss**

1. A man purchased a box full of pencils at the rate of 7 for Rs. 9 and sold all of them at the rate of 8 for Rs. 11. In this transaction, he gained Rs. 10. How many pencils did the box contain?
(a) 111  
(b) 112  
(c) 114  
(d) 116

2. A man bought a number of clips at 3 for a rupee and an equal number at 2 for a rupee. At what price per dozen should he sell them to make a profit of 20%?
(a) Rs. 9  
(b) Rs. 10  
(c) Rs. 6  
(d) Rs. 7

3. A man buys eggs at 2 for Re. 1 and an equal number at 3 for Rs. 2 and sells the whole at 5 for Rs. 3. His gain or loss percent is:
(a) $\frac{2}{7}$% loss  
(b) $\frac{6}{7}$% gain  
(c) $\frac{3}{7}$% loss  
(d) $\frac{2}{7}$% loss

4. A man bought some oranges at Rs. 10 per dozen and bought the same number of oranges at Rs. 8 per dozen. He sold these oranges at Rs. 11 per dozen and gained Rs.120. The total number of oranges bought by him was:
(a) 55 dozens  
(b) 80 dozens  
(c) 90 dozens  
(d) 60 dozens

5. A vendor bought toffees at 6 for a rupee. How many for a rupee must he sell to gain 20%?
1  
2  
3  
4  
5

**Answers**
1. (b)  
2. (c)  
3. (d)  
4. (d)  
5. (c)

**Time and Work**

1. A and B together can do a piece of work in 12 days, which B and C together can do in 16 days. After A has been working at it for 5 days and B for 7 days, C finishes it in 13 days. In how many days C alone will do the work?
(a) 16  
(b) 24  
(c) 37  
(d) 48

2. A and B can do a piece of work in 45 days and 40 days respectively. They began to do the work together but A leaves after some days and then B completed the remaining work in 23 days. The number of days after which A left the work was:
(a) 11  
(b) 7  
(c) 9  
(d) 12

3. A can do a piece of work in 14 days which B can do in 21 days. They begin together but 3 days before the completion of the work, A leaves off. The total number of days to complete the work is:
(a) 6  
(b) 8  
(c) 10  
(d) 13

4. A, B and C can complete a work separately in 24, 36 and 48 days respectively. They started together but C left after 4 days of start and A left 3 days before the completion of the work. In how many days will the work be completed?
(a) 15 days  
(b) 24 days  
(c) 25 days  
(d) 38 days

5. A, B and C together earn Rs. 300 per day, while A and C together earn Rs. 188 and B and C together earn Rs. 152. The daily earning of C is:
(a) Rs. 40  
(b) Rs. 70  
(c) Rs. 112  
(d) Rs. 160

**Answers**
1. (b)  
2. (c)  
3. (c)  
4. (a)  
5. (a)

**Pipes and Cisterns**

1. A pump can fill a tank with water in 2 hours. Because of a leak, it took $\frac{21}{3}$ hours to fill the tank. The leak can drain all the water of the tank in:
(a) 43 hrs  
(b) 9 hrs

**Answers**
1. (b)  
2. (c)  
3. (d)  
4. (d)  
5. (c)
2. Two taps $A$ and $B$ can fill a tank in 5 hours and 20 hours respectively. If both the taps are open then due to a leakage, it took 30 minutes more to fill the tank. If the tank is full, how long will it take for the leakage alone to empty the tank?

(a) 44 hrs  
(b) 12 hrs  
(c) 18 hrs   
(d) 36 hrs

3. Two pipes $A$ and $B$ together can fill a cistern in 4 hours. Had they been opened separately, then $B$ would have taken 6 hours more than $A$ to fill the cistern. How much time will be taken by $A$ to fill the cistern separately?

(a) 10 hr  
(b) 4 hrs  
(c) 6 hrs  
(d) 8 hrs

4. One pipe can fill a tank three times as fast as another pipe. If together the two pipes can fill the tank in 36 minutes, then the slower pipe alone will be able to fill the tank in:

(a) $92 \text{ min}$  
(b) $112 \text{ min}$  
(c) $144 \text{ min}$  
(d) $192 \text{ min}$

5. A tank is filled in 5 hours by three pipes $A$, $B$ and $C$. The pipe $C$ is twice as fast as $B$ and $B$ is twice as fast as $A$. How much time will pipe $A$ alone take to fill the tank?

(a) 22 hrs  
(b) 27 hrs  
(c) 35 hrs  
(d) cannot be determined

ANSWERS

1. (d) 2. (d) 3. (6) 4. (c) 5. (c)

Problems on Train

1. A train moves past a telegraph post and a bridge 264 m long in 8 seconds and 20 seconds respectively. What is the speed of the train?

(a) $75 \text{ km/hr}$  
(b) $82 \text{ km/hr}$  
(c) $79 \text{ km/hr}$  
(d) $79.2 \text{ km/hr}$

2. A train takes 18 seconds to pass completely through a station 162 m long and 15 seconds through another station 120 m long. The length of the train is:

(a) 73 m  
(b) 92 m  
(c) 90 m  
(d) 100 m

3. How many seconds will a 500 metre long train take to cross a man walking with a speed of 3 km/hr in the direction of the moving train if the speed of the train is 63 km/hr?

(a) 32  
(b) 30  
(c) 40  
(d) 48

4. A jogger running at 9 kmph alongside a railway track is 240 metres ahead of the engine of a 120 metre long train running at 45 kmph in the same direction. In how much time will the train pass the jogger?

(a) 38 sec  
(b) 20 sec  
(c) 36 sec  
(d) 72 sec

5. A train 110 metres long is running with a speed of 60 kmph. In what time will it pass a man who is running at 6 kmph in the direction of the train?
opposite to that in which the train is going?
(a) 8 sec  (b) 6 sec  (c) 7 sec  (d) 12 sec

ANSWERS
1. (d)  2. (c)  3. (b)  4. (c)  5. (b)

Alligation or Mixture

1. In what ratio must a grocer mix two varieties of tea worth Rs. 60 a kg and Rs. 65 a kg so that by selling the mixture at Rs. 68.20 a kg he may gain 10%?
   (a) 3 : 2  (b) 6 : 7  (c) 3 : 5  (d) 4 : 5

2. How many kilograms of sugar costing Rs. 9 per kg must be mixed with 27 kg of sugar costing Rs. 7 per kg so that there may be a gain of 10% by selling the mixture at Rs. 9.24 per kg?
   (a) 38 kg  (b) 43 kg  (c) 54 kg  (d) 63 kg

3. In what ratio must water be mixed with milk to gain \( \frac{16}{3} \) on selling the mixture at cost price?
   (a) 1 : 6  (b) 7 : 1  (c) 7 : 3  (d) 4 : 3

4. A dishonest milkman professes to sell his milk at cost price but he mixes it with water and thereby gains 25%. The percentage of water in the mixture is:
   (a) 4%  (b) 35%  (c) 20%  (d) 30%

5. A man can row at 5 kmph in still water. If the velocity of current is 1 kmph and it takes him 1 hour to row to a place and come back, how far is the place?
   (a) 2.4 km  (b) 2.5 km  (c) 3 km  (d) 3.1 km

ANSWERS
1. (b)  2. (c)  3. (d)  4. (d)  5. (c)

Probability

1. Two dice are thrown simultaneously. What is the probability of getting two numbers whose product is even?
   (a) \( \frac{3}{5} \)  (b) \( \frac{3}{4} \)  (c) \( \frac{3}{8} \)  (d) \( \frac{7}{9} \)

2. Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn bears a number which is a multiple of 3?
   (a) \( \frac{3}{10} \)  (b) \( \frac{5}{11} \)  (c) \( \frac{5}{2} \)  (d) \( \frac{3}{5} \)

3. Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn bears a number which is a multiple of 3 or 5?
   (a) \( \frac{6}{7} \)  (b) \( \frac{9}{11} \)  (c) \( \frac{8}{15} \)  (d) \( \frac{9}{20} \)

4. In a lottery, there are 10 prizes and 25 blanks. A lottery is drawn at random. What is the probability of getting a prize?
   (a) \( \frac{11}{13} \)  (b) \( \frac{7}{9} \)  (c) \( \frac{2}{7} \)  (d) \( \frac{5}{7} \)

5. One card is drawn at random from a pack of 52 cards. What is the probability that the card drawn is a face card?
   (a) \( \frac{5}{7} \)  (b) \( \frac{4}{13} \)  (c) \( \frac{1}{4} \)  (d) \( \frac{11}{52} \)

ANSWERS
1. (b)  2. (c)  3. (d)  4. (d)  5. (c)

Boats and Streams

1. Speed of a boat in standing water is 9 km/h and the speed of the stream is 1.5 km/h. A man rows to a place at a distance of 105 km and comes back to the starting point. The total time taken by him is:
   (a) 22 hours  (b) 27 hours  (c) 20 hours  (d) 24 hours

2. The speed of a boat in still water is 15 km/hr and the rate of current is 3 km/hr. The distance travelled downstream in 12 minutes is:
   (a) 3.3 km  (b) 2.9 km  (c) 2.4 km  (d) 3.6 km

3. A man can row at 5 km/h in still water. If the velocity of current is 1 km/h and it takes him 1 hour to row to a place and come back, how far is the place?
   (a) 2.4 km  (b) 2.5 km  (c) 3 km  (d) 3.1 km

4. A boat takes 19 hours for travelling downstream from point A to point B and coming back to a point C midway between A and B. If the velocity of the stream is 4 km/h and the speed of the boat in still water is 14 km/h, what is the distance between A and B?
   (a) 162 km  (b) 180 km

ANSWERS
1. (a)  2. (d)  3. (a)  4. (c)  5. (d)
5. A man can row $9\frac{1}{3}$ kmph in still water and finds that it takes him thrice as much time to row up than as to row down the same distance in the river. The speed of the current is:
(a) $2\frac{1}{2}$ km/hr  (b) $4\frac{1}{9}$ km/hr  (c) $4\frac{2}{2}$ km/hr  (d) $4\frac{1}{2}$ km/hr

**ANSWERS**

1. (d)  2. (d)  3. (a)  4. (b)  5. (c)

### Simple Interest

1. If Rs. 64 accounts to Rs. 83.20 in 2 years, what will Rs. 86 amount to in 4 years at the same rate per cent pr annum?
   (a) Rs. 115.80  (b) Rs. 127.70  (c) Rs. 127.40  (d) Rs. 51.60

2. The simple interest on a certain sum of money at the rate of 5% p.a. for 8 years is Rs. 840. At what rate of interest the same amount of interest can be received on the same sum after 5 years?
   (a) 10%  (b) 8%  (c) 9%  (d) 12%

3. The interest on a certain deposit at 4.5% p.a. is Rs. 202.50 in one year. How much will the additional interest in one year be on the same deposit at 5% p.a.?
   (a) Rs. 30.25  (b) Rs. 22.50  (c) Rs. 25  (d) Rs. 52.75

4. A sum invested at 5% simple interest per annum grows to Rs. 504 in 4 years. The same amount at 10% simple interest per annum in $\frac{2}{2}$ years will grow to:
   (a) Rs. 530  (b) Rs. 555  (c) Rs. 525  (d) Rs. 650

5. What will be the ratio of simple interest earned by certain amount at the same rate of interest for 6 years and that for 9 years?
   (a) 5 : 3  (b) 4 : 7  (c) 2 : 3  (d) data inadequate

**ANSWERS**

1. (a)  2. (a)  3. (c)  4. (b)  5. (a)

### Area

1. The diagonal of a rectangle is thrice its smaller side. The ratio of the length to the breadth of the rectangle is:
   (a) 4 : 1  (b) $\sqrt{3} : 1$  (c) $\sqrt{2} : 1$  (d) $2\sqrt{2} : 1$

2. A rectangular carpet has an area of 120 sq. metres and a perimeter of 46 metres. The length of its diagonal is:
   (a) 15 m  (b) 19 m  (c) 17 m  (d) 22 m
3. The diagonal of a rectangle is $\sqrt{41}$ cm and its area is 20 sq. cm. The perimeter of the rectangle must be:
(a) 10 cm  
(b) 18 cm  
(c) 22 cm  
(d) 42 cm

4. A took 15 seconds to cross a rectangular field diagonally walking at the rate of 52 m/min and B took the same time to cross the same field along its sides walking at the rate of 68 m/min. The area of the field is:
(a) 52 m²  
(b) 40 m²  
(c) 61 m²  
(d) 60 m²

5. A rectangular carpet has an area of 60 sq. m. If its diagonal and longer side together equal 5 times the shorter side, the length of the carpet is:
(a) 8 m  
(b) 12 m  
(c) 15 m  
(d) 14.5 m

ANSWERS
1. (d)  
2. (c)  
3. (b)  
4. (d)  
5. (b)

Volume and Surface Area

1. A rectangular water tank is 80 m × 40 m. Water flows into it through a pipe 40 sq. cm at the opening at a speed of 10 km/hr. By how much, the water level will rise in the tank in half an hour?
   (a) $\frac{4}{11}$ cm  
   (b) $\frac{5}{9}$ cm  
   (c) $\frac{5}{8}$ cm  
   (d) $\frac{4}{5}$ cm

2. A hall is 15 m long and 12 m broad. If the sum of the areas of the floor and the ceiling is equal to the sum of areas of the four walls, the volume of the hall is:
   (a) 720  
   (b) 800  
   (c) 1200  
   (d) 2000

3. The sum of the length, breadth and depth of a cuboid is 19 cm and its diagonal is $5\sqrt{5}$ cm. It surface area is:
   (a) 127 cm²  
   (b) 236 cm²  
   (c) 361 cm²  
   (d) 480 cm²

4. A swimming pool 9 m wide and 12 m long is 1 m deep on the shallow side and 4 m deep on the deeper side. Its volume is:
   (a) 309 m³  
   (b) 270 m³  
   (c) 360 m³  
   (d) 607 m³

5. A metallic sheet is of rectangular shape with dimensions 48 m × 36 m. From each of its corners, a square is cut off so as to make an open box. If the length of the square is 8 m, the volume of the box (in m³) is:
   (a) 5835  
   (b) 6400  
   (c) 6420  
   (d) 9260

Stock and Shares

1. A 9% stock yields 8%. The market value of the stock is:
   (a) Rs. 72  
   (b) Rs. 94  
   (c) Rs. 112.50  
   (d) Rs. 118.50

2. A 12% stock yielding 10% is quoted at:
   (a) Rs. 87  
   (b) Rs. 112  
   (c) Rs. 112  
   (d) Rs. 120

3. By investing Rs. 1620 in 8% stock, Michael earns Rs. 135. The stock is then quoted at:
   (a) Rs. 90  
   (b) Rs. 96  
   (c) Rs. 106  
   (d) Rs. 110

4. To produce an annual income of Rs. 1200 from a 12% stock at 90, the amount of stock needed is:
   (a) Rs. 10,000  
   (b) Rs. 12,800  
   (c) Rs. 13,000  
   (d) Rs. 16,000

5. In order to obtain an income of Rs. 650 from 10% stock at Rs. 96, one must make an investment of:
   (a) Rs. 6200  
   (b) Rs. 6240  
   (c) Rs. 6500  
   (d) Rs. 9800

ANSWERS
1. (c)  
2. (d)  
3. (b)  
4. (a)  
5. (b)
ENGLISH COMPREHENSION

Narration (Direct and Indirect)

**Directions:** Pick out the correct alternative that complete sentence which is changed into indirect narration.

1. The thief said to the policeman, “Why did you beat me so mercilessly?”
   The thief:
   (a) asked the policeman why he had beaten him so mercilessly.
   (b) said the policeman that why he had beaten him mercilessly.
   (c) asked the policeman that why he had beaten him so mercilessly.
   (d) None of these.

2. The saint said to me, “Why do you not go to the temple daily?”
   The saint:
   (a) said to me that why I did not go to the temple daily.
   (b) asked me that why I did not go to the temple daily.
   (c) asked me that why I do not go to the temple daily.
   (d) enquired of me why I did not go to the temple daily.

3. My friend said to me, “Where do you go daily?”
   My friend:
   (a) asked me where I went daily.
   (b) said to me that where I went daily.
   (c) told me that where I went daily.
   (d) asked me that where I go daily.

4. The teacher said to me, “Have you read this book?”
   The teacher:
   (a) told to me that had I read this book.
   (b) said to me that had I read this book.
   (c) asked me if I had read that book.
   (d) told me that I had read that book.

5. The milk man says, “My cow does not give much milk.”
   The milk man:
   (a) said that his cow does not give much milk.
   (b) told that his cow does not give much milk.
   (c) says that his cow does not give much milk.
   (d) told that his cow do not give much milk.

**ANSWERS**

1. (b) 2. (b) 3. (b) 4. (c) 5. (b)

Common Error

**Directions:** In each of the following sentences four words or phrases have been underlined. Only one underlined part in each sentence is not acceptable in standard English. Pick up the part 1, 2, 3, 4.

1. I have seen as bad or worse scenes of disorder at the English fair than the ones in any other Australian mining town.
   1. (a) as bad or worse
   2. disorder
   3. than
   4. any other

2. This is the third communication we have sent and we are surprised that we have received no answer.
   1. (a) communication
   2. sent
   3. received
   4. answer

3. The officers are now perfectly happy fishing, boating, shooting, playing cricket and other sports.
   1. (a) now
   2. perfectly
   3. playing cricket
   4. other sports

4. While in conversation with a high ranking military officer he told me that at the head-quarters nothing was known.
   1. (a) high ranking
   2. he told me
   3. head-quarters
   4. known

5. The fear of an impending invasion has more to do than even the debasing of the coinage with the financial difficulties.
   1. (a) fear
   2. invasion
   3. debasing
   4. financial difficulties

**ANSWERS**

1. (a) 2. (d) 3. (d) 4. (b) 5. (c)
One-Word Substitution

Directions: In each of these questions, out of the four alternatives, choose the one which can be substituted for the given sentence, group of words or clauses.

1. Parts of a country behind the coast or a river's banks.
   (a) Swamps (b) Archipelago (c) Hinterland (d) Isthmus
2. A lower-area storm with high winds rotating about a centre of low atmospheric pressure.
   (a) Cyclone (b) Tornado (c) Typhoon (d) Hurricane
3. One who promotes the idea of absence of government of any kind, when every man should be a law unto himself.
   (a) Anarchist (b) Belligerent (c) Iconoclast (d) Agnostic
4. Something which is not thorough or profound.
   (a) Superficial (b) Superstitious (c) Superfluous (d) Supernatural
5. Indifference to pleasure or pain.
   (a) Docility (b) Stoicism (c) Patience (d) Reticence

Idioms and Phrases

Directions (Q. No. 1-30): Select the meaning of the bold Idiom or phrase from the given alternatives.

1. In the organised society of today no individual or nation can plough a lonely furrow.
   (a) remain unaffected (b) do without the help of others (c) survive in isolation (d) remain non-aligned
2. To flog a dead horse
   (a) to do interesting things (b) to try to take work from a weak horse (c) to beat a horse that is dead (d) to revive interest in a subject which is out of date
3. To bait the hook to suit the fish
   (a) to look at things from another person's point of view (b) to catch fish by providing suitable food (c) to do things to please others (d) to prepare a box to pack the fish
4. Bed of roses
   (a) very soft bed (b) dull life (c) belong to (d) full of joys
5. Black and blue
   (a) painting (b) severely (c) together (d) intermix

Synonyms and Antonyms

Directions (Q. No. 1-30): In this section you find a number of sentences, parts of which are bold. For each bold part, four or five words/phrases are listed below. Choose the word/phrase nearest in meaning to the bold part.

1. Indians are likely to be parochial.
   (a) Generous (b) Narrow-minded (c) Brave (d) Short-sighted
2. I was discomfited to find the boss in the disco.
   (a) irritated (b) uncomfortable (c) embarrassed (d) displeased
3. He spent most of his years debunking politicians.
   (a) Exposing (b) Cheating (c) Threatening (d) Pacifying
4. We arrived safely at the quay and went ashore.
   (a) Peninsula (b) Wharf (c) Target (d) Island
5. Editors are known to be pernickety about grammar.
   (a) Spiteful (b) Careless (c) Fussy (d) Ignorant

Sentence Correction

Directions: Each of the following question is in the form of a sentence with four underlined portions marked a, b, c and d, respectively. Choose the marked portion that carries errors. If no error required then your answer is 5.

1. A tapestry consists of a foundation weave, a called the wrap, which across are passed b several coloured threads, called wefts, c forming decorative patterns. d
2. The fossil remains of many extinct mammals have been found in the tar pits or Rancho Brea in Los Angeles.

3. Chemical engineering is based on the principles of physics, chemists, and mathematics.

4. The salesman refused to show the family around the showroom, till they told him what kind of a car they were looking for.

5. Despite the manager's enthusiastic explanation of the scheme, we were completely disinterested in the matter.

ANSWERS
1. (b) 2. (a) 3. (c) 4. (c) 5. (c)

Sentence Arrangements

Direction (Q. No. 1-30) : Sentences given in each question, when properly sequenced form a coherent paragraph. Each sentence is labelled with letter. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph.

1. A. ‘Electricity’ is a subject enumerated in the Concurrent list, meaning that the Federal and State legislatures are competent to enact laws on the subject.
   B. The Constitution of India has demarcated the legislative competence of the Federal and State legislatures in three different lists.
   C. However, a State law cannot override, or be inconsistent with, a Federal law and in case of inconsistency, the Federal law will override the State law.
   D. The Union list contains matters within the exclusive domain of the Federal legislature, the State list contains matters within the exclusive domain of the State legislature, and the Concurrent list contains subjects on which both the Federal and the State legislatures are competent to enact laws.

   (a) ACBD   (b) BDAC   (c) DABC   (d) BCDA

2. A. The Vikings were the terrorists whom Europe feared the most between the eighth and the twelfth centuries.
   B. They set out on these voyages of dangerous adventure because they felt an even more unbearable fear than did their neighbours who stayed behind.
   C. For they were tortured by the thought that their name and reputation might vanish into nothingness.
   D. They managed to brave the seas to pillage, ransom, and create havoc from Constantinople to Lisbon and Dublin, even though they carried inside them all the usual fears of poor peasants as well as the loneliness of Scandinavia’s long nights.

   (a) CDAB   (b) CBAD   (c) DABC   (d) ADBC

3. A. Deprived of livelihood and income, they face penury, and as families split up and spread out, their community bonds crumble.
   B. Oddly, all this happens in the name of development, and the victim are described as beneficiaries.
   C. Cut off from their most vital resources, those uprooted are then robbed of their history traditions and culture.
   D. Imagine the entire population of the continent of Australia turned out of their homes – eighteen million people losing their lands, evicted from their houses.

   (a) DACB   (b) DBAC   (c) ACDB   (d) ABDC

4. A. This chemical compound finds wide usage in diversified industries such as refectories, ceramics, etc.
   B. Indal developed the requisite technology in-house at its Belgaum centre.
   C. In 1982-83, it started developing special alumina, an import substitute.
   D. In pursu of its policy of adding value to the basic products, Indal has been adding value to alumina too.

   (a) BCDA   (b) CDAB   (c) CBAD   (d) DCAB

5. A. India accorded Most Favoured Nation (MFN) status to Pakistan long ago.
   B. Matters have hardly improved since dialogue was broken off in early 1994.
   C. Pakistan is still only talking about giving India MFN status in trade, even though it is obliged to under the World Trade Organisation.
   D. In some ways, they have worsened.

   (a) CADB   (b) BDCA   (c) CBDA   (d) ACBD

ANSWERS
1. (b) 2. (d) 3. (a) 4. (d) 5. (d)
**Analogy**

Direction (Q. No. 1-30): Each of the questions consists of two capitalised words which have a certain relationship to each other. Followed by four pairs of words. Choose the pair that is related to each other in the same way as the capitalised pair.

1. PEST : IRKSOME
   (a) salesclerk : courteous
   (b) expert : proficient
   (c) enigma : unexpected
   (d) leader : non-descript

2. PROLOGUE : NOVEL
   (a) preamble : constitution
   (b) sketch : drawing
   (c) movement : symphony
   (d) index : book

3. EXPAND : VOLUME
   (a) ascent : flight
   (b) proliferate : number
   (c) bend : flexibility
   (d) cool : temperature

4. RUST : CORROSION
   (a) vapour : flammability
   (b) dew : condensation
   (c) crystal : purification
   (d) solution : precipitation

5. CLAIM : LEGITIMATED
   (a) hypothesis : confirmed
   (b) verdict : appealed
   (c) counter : argument : doubted
   (d) proposition : repeated

ANSWERS

1. (b) 2. (a) 3. (b) 4. (c) 5. (b)

**Comprehension**

Directions (Q.1–11): Read the following passage carefully and answer the questions given below it. Certain words are printed in bold in the passage to help you locate them while answering some of the questions.

What is immediately needed today is the establishment of a World Government or an International Federation of mankind. It is the utmost necessity of the world today, and all those persons who wish to see all human beings happy and prosperous naturally feel it keenly. Of course, at times we feel that many of the problem of our political, social, linguistic and cultural life would come to an end if there were one Government all over the world. Travellers, businessmen, seekers of knowledge and teachers of righteousness know very well that great impediments and obstructions are faced by them when they pass from one country to another, exchange goods, get information, and make an efforts to spread their good gospel among their fellow-men. In the past, religious sects divided one set of people against another, colour of skin or shape of the body set one against the other. But today when philosophical light has exploded the darkness that was created by religious differences, and when scientific knowledge has flasified the superstitions, they have enabled human beings of all religious views and of all races and colours to come in frequent contact with one another. It is the governments of various countries that keep people of one country apart from, those of another. They create artificial barriers, unnatu-
d distinctions, unhealthy isolation, unnecessary fears and dangers in the minds of common men who by their nature want to live in friendship with their fellow-men. But all these evils would cease to exist if there were one Government all over the world.

1. What divides people of a country against another?
   (a) Different religions
   (b) Different language
   (c) Different social and political systems of different people
   (d) Government of various countries

2. What is the urgent need of the world today?
   (a) The establishment of an international economic order.
   (b) The establishment of a world government.
   (c) The creation of a cultural international social order.
   (d) The raising of an international spiritual army.

3. What will the world Government be expected to do?
   (a) it will arrange for interplanetary contacts
   (b) it will end all wars for all time to come
   (c) it will bring about a moral regeneration of mankind
   (d) it will kill the evil spirit in man

4. Choose the word which is SIMILAR in meaning as the word "righteousness" as used in the passage.
   (a) rectitude (b) religiosity
   (c) requirement (d) scrupulousness

**ANSWERS**

1. (d) 2. (d) 3. (c) 4. (a) 5. (d)
GENERAL KNOWLEDGE

Indian History

The Indian History is perhaps the oldest in the world, and the sources of Indian History are the verbal history, because our ancients never did bother about putting things down on paper and archaeological evidences. Based on the evidences available today, Indian History, like the history of every ancient culture in the world, is broadly divided into four periods as mentioned below:

Pre-History

From the big bang, the primeval swamp to the Indus Valley civilization. Though Indus Valley civilization is included in pre-historical period. However, technical evidences shows that Indus Valley civilization did have a script, although it has not been decoded yet. So, it is generally included in Ancient History nowadays.

Ancient History

It begins from the Indus Valley civilization (for which the date is a matter of hot debate, but historians have agreed to disagree on 3000 BC) to just after the king Harsha Vardhana, which is around 700-800 BC.

Medieval History

It begins from 800 BC to mid-18th century AD.

Modern History

From mid-18th century to the independence of India, which is on August 15, 1947. The history of Modern India is farther sub-divided into two major periods:
1. The British Period.
2. The India Freedom Struggle and Partition of India.

ANCIENT INDIA

The discovery of Mohenjodaro and Harappa by British archeologist: Marshall proved that Indian civilization is the oldest civilization in the world. Even India came before Greece, considered the oldest civilization before the discovery of Mohenjodaro and Harappa. The main features of Ancient Indian History are as follows:

Indus Valley Civilization

Discovery: In 1921, R.B. Dayaram Sahani, first discovered Harappa, in the Montgomery district of the Punjab. According to radio-carbon dating, it spread from the year 2350-1750.

Indus Valley Civilization

Dr. R. D. Banerjee found the ancient city Mohenjodaro (literally, 'city of the dead') in Larkana district of Sindh, now in Pakistan in 1922.

The Marvelous Town Planning of Mohenjodaro: A chief feature of Mohenjodaro is its superb town planning. The streets, which divided the city into neat rectangular or square blocks, varied in width but always intersected each other at right angles. The city had an elaborate drainage system, consisting of horizontal and vertical drains, street drains and so on. The architecture of the buildings was clearly intended to be functional and minimalist, and certainly not to please the aesthete. Mohenjodaro was obviously a cosmopolitan city, with people of different races mingling with the local populace-Proto-Austroloid, Mediterranean, Alpine and Mongoloid.

The Indus Valley Civilization

Before the coming of Aryans, there was a civilization that was not only well-developed, but actually far more sophisticated than that of the Aryans. The Indus Valley civilization said its last hurray roughly in 2200 BC. The beginning and end of the Indus Valley Civilization are both a matter of debate because people could not have emerged complete with their perfect town planning, neat houses, lovely jewellery and loads of make-up. So where did they come from? and then having come, just where did they disappear? Popular theory, which is most accepted is that the people of the Harappan civilization were chased out by the Aryans and went down south. The present South Indians are their descendants.
The Vedic Period (1500 BC-600 BC)

Initially, they settled in the area of Sapt-Sindhu, which included Punjab, Kashmir, Sindh, Kabul and Gandhara (Kandhar). The chief sources of this period are The Vedas and the Epics, the Mahabharata and the Ramayana, which through their stories PO and hymns tell us about the expansion of the Aryans. The epic Ramayana is a symbolic tale which tells of the Aryan expansion to the south-the good, almost godly, aryaputra (an Aryan’s son) king Rama surging forth to finish off the evil Dasyu (that was what the Aryans called the natives) Ravana.

Aryans Political System

There was complex political system. They hung around together in small village settlements (which later grew to kingdoms) and the basis of their political and social organization was the clan or kula. It was very much a patriarchal society, with the man the house expected to keep his clan in control.

The King was the Supreme Power

The king was the supreme power though he had to work in tandem with the people’s wishes. He had an elaborate court of many officials, including the chief queen (Mahishi) who was elected to help in the decision making process. Two Assemblies, Sabha and Samiti further assisted the king.

No Rigidity in Caste System

The caste system was a loose social system where people could move up and down the social scale. Aryan’s worshipped nature gods-they prayed to the Usha (Dawn), Prajapati (The Creator), Rudra (Thunder), Indra (Rain), Surya (Sun) and so on. These gods and goddesses were appeased by prayers and sacrifices.

Growth of Buddhism and Jainism

Buddhism and Jainism were instant hits with the populace and became powerful clannish minorities while the bulk of the people remained with Aryanism. Not for long, however. As the two new religions which had extremely charismatic leaders and very zealous followers caught the people’s imagination, the influence of both faiths spread enough for kings to profess and actively promote them.

Geography

Solar System

Important Facts

- Biggest planet: Jupiter
- Smallest planet: Mercury
- Satellite of Earth: Moon
- Nearest planet from Sun: Mercury
- Farthest planet from Sun: Neptune
- Nearest planet to Earth: Venus
- Brightest planet: Venus
- Brightest star: Dog Star
- Planet having maximum number of satellite: Jupiter (63)
- Coldest planet: Neptune
- Red planet (seen at night): Mars
- Heaviest planet: Jupiter
- Biggest satellite of solar system: Ganymede system
- Smallest satellite of solar system: Demos
- Blue planet: Earth
- Red planet: Mars
- Morning star: Venus
- Evening star: Venus
- Sister of Earth: Venus
- 9th planet: Karla

Sun

Distance from Earth: 149.6 million km (Approximately).
Critical value of absolute visual magnitude 4.83
Diameter: 13,92,000 km
Temperature of Code: 20-15 million Celsius
Apparent surface temperature: 5778°C (6000°C approximately)
Rotational period: 25 days, 3 hrs., 21 minutes, 136 seconds (in reference of equator) 33 days (in reference to pole)
Chemical composition: Hydrogen-69.5%, Helium-28%. Carbon, Nitrogen and Oxygen-2%, Magnesium, Sulphur, Silicon and Iron 0.5%
Age: 5 billion years (approximately)
Possible life of normal star 10 billion years (approximately)
Equatorial radius: 6,95,500 km (approximately)

Galaxies

<table>
<thead>
<tr>
<th>Galaxy Name</th>
<th>Magnitude Visual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milky wave</td>
<td>—</td>
</tr>
<tr>
<td>Large Magellanic Cloud</td>
<td>0.9</td>
</tr>
<tr>
<td>Small Magellanic Cloud</td>
<td>2.5</td>
</tr>
<tr>
<td>Ursa Minor Dwarf</td>
<td>11.9</td>
</tr>
<tr>
<td>Sculptor Dwarf</td>
<td>80</td>
</tr>
<tr>
<td>Draco Dwarf</td>
<td>10.9</td>
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</table>
### Guidance Programme for SSC CGL Exam 2012: [http://sscportal.in/community/guidance-programme/cgl](http://sscportal.in/community/guidance-programme/cgl)

<table>
<thead>
<tr>
<th>Formax System</th>
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<tr>
<td>Leo - II System</td>
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</tr>
<tr>
<td>Leo - I System</td>
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<tr>
<td>N. G. C 6822</td>
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</tr>
<tr>
<td>N.G.C. 147</td>
<td>9.73</td>
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<tr>
<td>N.G.C. 185</td>
<td>10.1</td>
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<tr>
<td>N. G.C. 205</td>
<td>8.17</td>
</tr>
<tr>
<td>N.G.C. 2 21 (M 32)</td>
<td>8.16</td>
</tr>
<tr>
<td>IC 1613</td>
<td>9.61</td>
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<tr>
<td>Andromeda Galaxy</td>
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<tr>
<td>N.G.C. 598 (M 33)</td>
<td>5.79</td>
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<tr>
<td>Maffel I</td>
<td>11.0</td>
</tr>
</tbody>
</table>

#### Moon

- Average distance: 3,84,365 km
- Diameter: 3,474 km
- Ratio of mass in reference to Earth: 1:81.30
- Density (with reference to water): 3.3464 kg/metre³
- Density (with reference to Earth): 0.6058
- Ratio in the gravitational force of Moon & Sun: 0.116
- Disappearing part of Moon: 0.41
- Maximum distance of Earth from Sun: 4,05,508 km
- Minimum distance of Earth from Sun: 3,63,300 km
- Revolution period of the Moon round the Earth:
  - Sidereal Month: 27 days, 7 hrs, 43.25 minutes
  - Synodic Month: 29 days, 12 hrs, 44 minutes
- Rotation on its own axis: 27 days, 7 hrs, 43 minutes, 11.47 sec.
- Atmosphere: Absent
- Highest mts. Peak: 35,000 (Libtney, situated at Moon’s south pole).
- Time taken by light to reach the earth: 1.3 seconds.
- Speed of Rotation at its own axis: 2287 miles per hrs.

#### Earth

- Approximate age of Earth: 4600,000,000, years
- Total surface area: 510,072,000 km²
- Total land area: 153,000,000 km²
- Water area: 71% of the total land surface: 357,100,000 km²
- Average density: 5.52 gm per cub.cm.
- Equatorial diameter: 12,756 km
- Polar diameter: 12,714 km
- Necessary escape velocity to cross the gravitational attraction of the Earth: 11.2 km/sec.
- Velocity of a rocket to go against the gravitational attraction of the Earth: 8 km/sec.
- Distance from Moon: 3,84,365 km
- Maximum height of the earth from M.S.L.: 8848 m (Mount Everest)
- Maximum depth of sea from M.S.L.: 11,033 m (Mariana Trench)
- Lowest part of the earth surface: 396 metre (Dead Sea)
- Rotational period at its own axis: 23 hrs, 56 minutes, 4.091 sec.
- Revolution of earth round the Sun: 365 day, 5 hrs, 48 minutes, 45.51 second
- Satellite of Earth: Moon
- Inclination at its own axis: 23°-27°.
- Average distance from Sun: 149,597,887.5 km

#### Venus

- Diameter: 11,102 km
- Mass: 4.867 × 10²⁴ kg
- Volume: 92,843 × 10¹⁰ km³
- Mean Radius: 6052 km
- Mean Density: 5204 kg/metre³
- Surface Gravity: 8.87 metre/second²
- Mean distance from the Sun: 108.2 million km
- Greatest distance from the Sun (Aphelion): 108.9 million km
- Least distance from the Sun: 107.5 million km (Perihelion)
- Rotational period: 243.7 days
- Revolutions period (Sidereal period): 224.7 days (earth days)
- Inclination of orbit: 3.39°
- Mean surface temperature: 464°C
- Mean surface pressure: 92 bars
- No. of Satellites: Nil

#### Mercury

- Diameter: 4878 km
- Mass: 3.64 × 10²⁰ tons (3.3 10 kg) (About 5% of the earth)
- Volume: 2.15 × 10²¹ cube metre (About 6% of the earth)
- Mean surface temperature: 464°C
- Mean surface pressure: 92 bars
- No. of Satellites: Nil
Indian Polity

**DIFFERENT SOURCES OF THE INDIAN CONSTITUTION**

Although the skeleton of the constitution was derived from Government of India Act 1935, many provisions were imported from other constitutions of the world. Some of them are listed below:

**Government of India Act 1935:** Federal scheme, office of Governor, power of Federal judiciary, emergency powers etc.

**Constitution of Britain:** Law making procedures, rule of law, provision for single citizenship, Parliamentary system of government, office of CAG.

**Constitution of USA:** Independence of judiciary, judicial review, fundamental rights, removal of Supreme Court and High Court judges, preamble and functions of Vice-president.

**Constitution of Canada:** Federation with strong Centre, to provide residuary powers to the centre.

**Constitution of Ireland:** Directive Principles of State policy, method of presidential elections, and the nomination of members to Rajya Sabha by the President.

**Constitution of Germany:** Provisions concerning the suspension of fundamental rights during emergency.

**Constitution of Australia:** Idea of the Concurrent list.

**Constitution of South Africa:** Amendment with 2/3rd majority in Parliament and election of the Members of Rajya Sabha on the basis of proportional representation.

**THE PREAMBLE**

The 42nd Amendment (1976) added the words Secular and ‘Socialist’ end now the Preamble reads as follows:

“We, the people of India having solemnly resolved to constitute India into a Sovereign, Socialist, Secular, Democratic Republic and to secure to all its citizens: Justice, social, economic and political; Liberty of thought, expression, belief, faith and worship; Equality of status and of opportunity; and to promote among them all Fraternity assuring the dignity of the individual and the unity and integrity of the Nation. In our Constituent Assembly on this twenty-sixty day November, 1949, we do hereby, Adopt, Enact and Give Ourselves this Constitution.”

**PARTS AND ARTICLES OF THE CONSTITUTION**

- **Part I/Articles 1-4**: Territory of India, admission, establishment or formation of new states
- **Part II/Articles 5-11**: Citizenship
- **Part III/Articles 12-35**: Fundamental Rights
- **Part I V/Articles 36-51**: Directive Principles of State Policy
- **Part I V-A/Article 51A**: Duties of a citizen of India
- **Part V/Articles 52-151**: Government at the Union level
- **Part VI/Articles 152-237**: Government at the State level
- **Part VII/Article 238**: Repealed by 7th Amendment 1956
- **Part VIII/Articles 239-241**: Administration of Union Territories
- **Part IX/Articles 242-243**: The Panchayats
- **Part IX-A/Articles 243P-243 ZG**: The Municipalities
- **Part X/Articles 244-244**: A Scheduled and tribal areas
- **Part XI/Articles 245-263**: Relations between the Union and States
- **Part XII/Articles 263-300**: A Finance, property, contracts and suits
- **Part XIII/Articles 301—307**: Trade, commerce and travel within territory of India
- **Part XIV/Articles 308-323**: Services under the Union and States
- **Part XIV-A/Articles 323A-323B**: Deals with administrative tribunals
- **Part XV/Articles 324-329**: A Election and Election Commission
- **Part XVI/Articles 330-342**: Special provision to certain classes SCs/STs, OBCs and Anglo Indians
- **Part XVII/Article 343-351**: Official languages
- **Part XVIII/Articles 352-360**: Emergency provisions
- **Part XIX/Article 361-367**: Miscellaneous provisions
- **Part XX/Article,68**: Amendment of Constitution
- **Part XXI/Articles X69-392**: Temporary, transitional and special provisions

**SCHEDULES IN THE CONSTITUTION**

- **First Schedule**: It deals with the territories of th. 28 states and 7 union, territories of the Indian Union.
- **Second Schedule**: Deals with salaries, allow a cesn etc., payable to the President of India, Governors of States, Chief Justice of India, judges of the Supreme Court and High Courts and
the Comptroller and editor General of India. There revised salaries now are:

- President of India Rs 1.50,000 pm
- Vice-President Rs 1.20,000 pm
- Governor of a state Rs 1,10,000 pm
- Chief Justice of India Rs 1,00,000 pm
- Judges of the Supreme Court Rs 90,000 pm
- Chief Justice of a High Court Rs 90,000 pm
- Judges of a High Court Rs 80,000 pm

Third Schedule
- It prescribes the various forms of oath or affirmation, which various incumbents have to take before assuming a public office.

Fourth Schedule
- Allocates seats to each state and union territory in the Rajya Sabha. Contains provisions as to the administration and control of Scheduled Areas.

Fifth Schedule
- It deals with the administration and control of the Scheduled Areas.

Sixth Schedule
- Deals with provisions regarding administration of tribal areas in the states of Assam, Meghalaya and Mizoram. This Schedule in the Constitution, amended in 1988 by the Act 67 of 1988, received the assent of the President on 16 December 1988, and was applied to the states of Tripura and Mizoram w.e.f. 16 December 1988.

Seventh Schedule
- Gives three lists of powers and subjects to be looked after by the Union and the states as follows:
  
<table>
<thead>
<tr>
<th>List</th>
<th>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i)</td>
<td>Union List—Comprises subjects of all-India importance like Defence. International Affairs. Railways. Post and Telegraph, Income tax, etc. The Parliament has the exclusive power to legislate on these subjects. It contains 97 subjects:</td>
</tr>
<tr>
<td></td>
<td>(ii) State List—Contains subjects of local importance. Normally, the State Legislature alone legislates on these subjects. It contains 66 subjects.</td>
</tr>
<tr>
<td></td>
<td>(iii) Concurrent List—Contains subjects on which the Parliament as well as the State Legislature enjoy authority. According to the 88th amendment, service tax is to be levied, collected and appropriated by the union and the states.</td>
</tr>
</tbody>
</table>

Eighth Schedule
- Gives a list of 22 regional languages recognised by the Constitution: Originally there were only 14 languages in the schedule and the 15th language ‘Sindhi’ was added by the list amendment in 1967, and three languages-Konkani, Manipuri and Nepali were added by the 71st amendment in 1992. In 2003, the 92nd amendment added four more languages to the list—‘Bodo’, ‘Dogri’ ‘Maithali’ and ‘Santhali’. The language are as follows:

1. Assamese
2. Bengali
3. Bodo
4. Dogri
5. Gujarati
6. Hindi
7. Kannada
8. Kashmiri
9. Malayalam
10. Maithali
11. Marathi
12. Odia
13. Punjabi
14. Sanskrit
15. Sindhi
16. Tamil
17. Telugu
18. Santhali
19. Urdu
20. Konkani
21. Manipuri
22. Nepali.

Ninth Schedule
- Contains certain Acts and regulations of the State Legislature dealing with and reforms and abolition of the zamindari system. It contains 284 Acts. This Schedule was added to the Constitution in 1951, by the First Constitution (Amendment Act.

Tenth Schedule
- Contains certain provisions—regarding disqualification of members on grounds of defection.

Eleventh Schedule
- It lists 29 subjects on which the panchayats have been given administrative control. It was added to the Constitution on 20 April 1992, by the 73rd Amendment in 1992.

Twelfth Schedule
- It lists 18 subjects on which the municipalities are given administrative control. It was added to the Constitution on 20 April 1992 by the 74th Amendment in 1992.
Indian Economy

HISTORY OF PLANNING IN INDIA

• First attempt to initiate economic planning in India was made by Sir M. Visvesvarayya, a noted engineer and politician in 1934 through his book ‘Planned Economy For India’.

• In 1938 ‘National Planning Commission’ was set-up under the chairmanship of J.L. Nehru by the Indian National Congress. Its recommendations could not be implemented because of the beginning of the Second World War and changes in the Indian political situation.

• In 1944 ‘Bombay Plan’ was presented by 8 leading industrialists of Bombay.

• In 1944 ‘Gandhian Plan’ was given by S. N. Agarwal.

• In 1945 ‘People’s Plan’ was given by M. N. Roy.

• In 1950 ‘Sarvodaya Plan’ was given by J. P. Narayan. A few points of this plan were accepted by the Government.

THE PLANNING COMMISSION

• The Planning Commission was set up on March 15, 1950 under the chairmanship J.L. Nehru, by a resolution of Union Cabinet.

• It is an extra-constitutional, non-statutory body.

• It consists of Prime Minister as the ex-officio Chairman, one deputy-Chairman appointed by the PM and some full time members.

• The tenure of its members and deputy chairman is not fixed. There is no definite definition of its members also. They are appointed by the Government on its discretion. The number of members can also change according to the wishes of Government.

Functions

• Assessment of material, capital & human resources of the country.

• Formulation of plans for the most effective & balanced utilization of country’s resources.

• To determine the various stages of planning and to propose the allocation of resources on the priority basis.

• To act as an advisory body to the Union Government.

• To evaluate from time to time the progress achieved in every stage of the plan and also to suggest remedial measures.

• To advise the Centre and the State Governments from time to time on special matters referred to the Commission.

NATIONAL DEVELOPMENT COUNCIL

• All the plans made by the Planning Commission have to be approved by National Development Council first. It was constituted to build co-operation between the States and the Planning Commission for economic planning.

• It is an extra-constitutional and extra-legal body.

• It was set up on August 6, 1952, by a proposal of the Government. The PM is the ex-officio chairman of NDC. Other members are Union Cabinet ministers, Chief’ Ministers & Finance Ministers of all States, Lt. Governors of Union Territories and Governors of Centrally Ruled States.

State Planning Boards

• Apex planning body at State level is generally a State Planning Body comprising the Chief Minister as Chairman, Finance and Planning ministers of that State and some technical experts.

• District Planning Committee is also there comprising both official and non-official members.

FIVE YEAR PLANS

First Five Year Plan (1951-56)

• It was based on Harrod-Domar Model.

• Community Development Program was launched in 1952.

• Two- fold objectives were there:
  o To correct the disequilibrium in the economy caused by 3 main problems— influx of refugees, severe food shortage and mounting inflation.
  o To initiate a process of all-round balanced development to ensure a rising national income and a steady improvement in living standards.

• Emphasized on agriculture, price stability, power & transport.

• It was more than a success, because of good harvests in the last two years.

Second Five Year Plan (1956-61)

• Also called Mahalanobis Plan after its chief architect. It was based on 1928 Soviet Model of Feldman.

• Its emphasis was on economic stability. Agriculture target fixed in the first plan was almost achieved. Consequently, the agriculture sector got low priority in the second five year plan.

• Its objective was rapid industrialization, particularly basic and heavy industries such as iron and steel, heavy chemicals like
nitrogenous fertilizers, heavy engineering and machine building industry.

- Besides, the Industrial Policy of 1956 emphasized the role of Public Sector and accepted the establishment of a socialistic pattern of the society as the goal of economic policy.

- Advocated huge imports which led to emptying of funds leading to foreign loans. It shifted basic emphasis from agriculture to industry far too soon. During this plan, price level increased by 30%, against a decline of 13% during the First Plan.

**Third Five Year Plan (1961-66)**

- At its conception time, it was felt that Indian economy has entered a take-off stage. Therefore, its aim was to make India a ‘self-reliant’ and ‘self-generating’ economy.

- Also, it was realized from the experience of first two plans that agriculture should be given the top priority to suffice the requirements of export and industry.

- The other objectives of the plan included the expansion of basic industries, optimum utilization of country’s labour power and reducing the inequalities of income and wealth.

- Relied heavily on foreign aid (IMF).


**Three Annual Plans (1966-69)**

- Plan holiday for 3 years. The prevailing crisis in agriculture and serious food shortage necessitated the emphasis on agriculture during the Annual Plans.

- During these plans a whole new agricultural strategy involving wide-spread distribution of High-Yielding Varieties of seeds, the extensive use of fertilizers, exploitation of irrigation potential and soil conservation was put into action to tide-over the crisis in agricultural production.

- During the Annual Plans, the economy basically absorbed the shocks given during the Third Plan, making way for a planned growth.
## General Science

### Inventions and Discoveries

<table>
<thead>
<tr>
<th>Invention</th>
<th>Year</th>
<th>Inventor</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetylene gas</td>
<td>1862</td>
<td>Berthelot</td>
<td>France</td>
</tr>
<tr>
<td>Adding machine</td>
<td>1642</td>
<td>Pascal</td>
<td>France</td>
</tr>
<tr>
<td>Adhesive tape, Scotch</td>
<td>1930</td>
<td>Richard Drew</td>
<td>U.S.A.</td>
</tr>
<tr>
<td>Aeroplane</td>
<td>1903</td>
<td>Orville &amp; Wilbur Wright</td>
<td>U.S.A.</td>
</tr>
<tr>
<td>Air Conditioning</td>
<td>1902</td>
<td>Carrier</td>
<td>U.S.A.</td>
</tr>
<tr>
<td>Airplane, jet engine</td>
<td>1939</td>
<td>Ohain</td>
<td>Germany</td>
</tr>
<tr>
<td>Airship (non-rigid)</td>
<td>1852</td>
<td>Henri Giffard</td>
<td>France</td>
</tr>
<tr>
<td>Aerosol spray</td>
<td>1926</td>
<td>Erik Rothen</td>
<td>Norway</td>
</tr>
<tr>
<td>Artificial Heart</td>
<td>1957</td>
<td>Willem Kolff</td>
<td>Netherlands</td>
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<tr>
<td>Atomic Bomb</td>
<td>1945</td>
<td>J. Robert Oppenheimer</td>
<td>U.S.A.</td>
</tr>
<tr>
<td>Atomic numbers</td>
<td>1913</td>
<td>Moseley</td>
<td>Britain</td>
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<tr>
<td>Atomic theory</td>
<td>1803</td>
<td>Dalton</td>
<td>Britain</td>
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<tr>
<td>Automatic rifle</td>
<td>1918</td>
<td>John Browning</td>
<td>U.S.A.</td>
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<tr>
<td>Bakelite</td>
<td>1907</td>
<td>Leo H. Baekeland</td>
<td>Belgium</td>
</tr>
<tr>
<td>Ballistic missile</td>
<td>1944</td>
<td>Wernher von Braun</td>
<td>Germany</td>
</tr>
<tr>
<td>Balloon</td>
<td>1783</td>
<td>Jacques &amp; Joseph Montgolfier</td>
<td>France</td>
</tr>
<tr>
<td>Ball-Point Pen</td>
<td>1888</td>
<td>John J. Loud</td>
<td>U.S.A.</td>
</tr>
<tr>
<td>Barometer</td>
<td>1644</td>
<td>Evangelista Torricelli</td>
<td>Italy</td>
</tr>
<tr>
<td>Battery (Electric)</td>
<td>1800</td>
<td>Alessandro Volta</td>
<td>Italy</td>
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<tr>
<td>Bicycle</td>
<td>1839-40</td>
<td>Kirkpatrick Macmillan</td>
<td>Britain</td>
</tr>
<tr>
<td>Bicycle Tyres (Pneumatic)</td>
<td>1888</td>
<td>John Boyd Dunlop</td>
<td>Britain</td>
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<tr>
<td>Bifocal Lens</td>
<td>1780</td>
<td>Benjamin Franklin</td>
<td>U.S.A.</td>
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<td>Bleaching Powder</td>
<td>1798</td>
<td>Tennant</td>
<td>Britain</td>
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<td>Bunsen Burner</td>
<td>1855</td>
<td>R. Wilhem von Bunsen</td>
<td>Germany</td>
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<td>Burglar Alarm</td>
<td>1858</td>
<td>Edwin T. Holmes</td>
<td>U.S.A.</td>
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<td>Calculus</td>
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<td>Newton</td>
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<td>Camera, Kodak</td>
<td>1888</td>
<td>Walker Eastman</td>
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<tr>
<td>Canned food</td>
<td>1804</td>
<td>Appert</td>
<td>France</td>
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<tr>
<td>Car (Steam)</td>
<td>1769</td>
<td>Nicolas Cugnot</td>
<td>France</td>
</tr>
<tr>
<td>Car (Petrol)</td>
<td>1888</td>
<td>Karl Benz</td>
<td>Germany</td>
</tr>
<tr>
<td>Carburetor</td>
<td>1876</td>
<td>Gottlieb Daimler</td>
<td>Germany</td>
</tr>
<tr>
<td>Cassette, Audio</td>
<td>1963</td>
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<td>1861</td>
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<td>1656</td>
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<td>1960</td>
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<td>1902</td>
<td>Dr.F. Lanchester-</td>
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<td>Year</td>
<td>Inventor</td>
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<td>1805</td>
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<td>1824</td>
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<td>1843</td>
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<td>1855</td>
<td>Kepany</td>
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<td>1885</td>
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<td>Film (taiking)</td>
<td>1922</td>
<td>J. Engl, J. Mussolle &amp; H. Vogt</td>
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<td>1923</td>
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<td>1933</td>
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<td>1853</td>
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<td>1952</td>
<td>Edward Teller</td>
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<td>1905</td>
<td>Simon Binet</td>
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<td>1937</td>
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<td>1960</td>
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<td>Launderette</td>
<td>1934</td>
<td>J.F. Cantrell</td>
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<td>Lift (Mechanical)</td>
<td>1852</td>
<td>Elisha G. Otis</td>
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<td>Lighting Conductor</td>
<td>1752</td>
<td>Benjamin Franklin</td>
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<td>Locomotive</td>
<td>1804</td>
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<td>Logarithms</td>
<td>1614</td>
<td>Napier</td>
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<td>Loom, power</td>
<td>1785</td>
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<td>1900</td>
<td>Horace Short</td>
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<td>Machine Gun</td>
<td>1718</td>
<td>Richard Gatling</td>
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<td>Magnetic Recording Tape</td>
<td>1928</td>
<td>Fritz Pfeumer</td>
<td>Germany</td>
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<td>Match, Safety</td>
<td>1826</td>
<td>John Walker</td>
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<td>Microphone</td>
<td>1876</td>
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<td>Robert Noyce &amp; Gordon Moore</td>
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<td>1590</td>
<td>Z. nassen</td>
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<td>1947</td>
<td>Per-y LeBaron Spencer</td>
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<td>Motor cycle</td>
<td>1885</td>
<td>G. Daimler</td>
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<td>1893</td>
<td>Thomas Edison</td>
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<td>MR!</td>
<td>1971</td>
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<td>1893</td>
<td>Julius Elster, Hans F. Geitel</td>
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<td>1835</td>
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<td>1709</td>
<td>Cristofori</td>
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<td>Pistol, revolver</td>
<td>1836</td>
<td>Colt</td>
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<td>1940</td>
<td>Kennedy, Whal, Seabolg, Segre</td>
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<td>1846</td>
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<td>Printing (Web)</td>
<td>1865</td>
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<td>1919</td>
<td>Rutherford</td>
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<td>1900</td>
<td>Plank</td>
<td>Germany</td>
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<td>Radar</td>
<td>1922</td>
<td>A.H. Taylor &amp; Leo. C. Young</td>
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<td>1947</td>
<td>Libby</td>
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<td>Year</td>
<td>Inventor</td>
<td>Country</td>
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<td>1841</td>
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<td>1823</td>
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<td>1775</td>
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<td>1621</td>
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<td>Bell Labs</td>
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<td>Telephone (Imperfect)</td>
<td>1849</td>
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<td>Telephone (Perfected)</td>
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<td>1608</td>
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<td>Television (Mechanical)</td>
<td>1926</td>
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<td>1928</td>
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<td>1831</td>
<td>Michael Faraday</td>
<td>Britain</td>
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<td>1948</td>
<td>Bardeen, Shockley &amp; Brattain</td>
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<td>1955</td>
<td>Sony</td>
<td>Japan</td>
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<td>1942</td>
<td>Szilard Fermi</td>
<td>U.S.A.</td>
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<td>1907</td>
<td>Spangler</td>
<td>U.S.A.</td>
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<td>1956</td>
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<td>1948</td>
<td>Georges de Mestral</td>
<td>Switzerland</td>
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<td>1907</td>
<td>Hurley Machine Co.</td>
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<td>1462</td>
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<td>Italy</td>
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<td>1877</td>
<td>Elisha Thomson</td>
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<td>600</td>
<td>Persian corn grinding</td>
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<td>1896</td>
<td>G. Marconi</td>
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<td>1895</td>
<td>W.K. Roentgen</td>
<td>Germany</td>
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<td>Zip Fastener</td>
<td>1891</td>
<td>W.L. Judson</td>
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PART-A: GENERAL INTELLIGENCE & REASONING

Directions (1-9): In each of the following questions select the related letters/word/number from the given alternatives.

1. CFIL : ORUX :: GDJM : ?
   (a) HJLN (b) NQST (c) PSYV (d) RTVX

2. BEHK : YVSP :: DGJM : ?
   (a) JGDA (b) ROLI (c) WTQN (d) ZWTQ

3. 24 : 60 :: 120 : ?
   (a) 160 (b) 220 (c) 300 (d) 108

4. 392 : 28 :: 722 : ?
   (a) 18 (b) 28 (c) 38 (d) 48

5. 123 : 36 :: 221 : ?
   (a) 52 (b) 69 (c) 72 (d) 25

6. Timid : Ass : : Cunning : ?
   (a) Ant (b) Fox (c) Rabbit (d) Horse

7. Ecstasy : Gloom : : ?
   (a) Congratulations : Occasion (b) Diligent : Successful
   (c) Measure : Scale (d) Humiliation : Exaltation

   (a) Museum (b) Stone (c) Chisel (d) Statue

9. MKQO : LNPR :: XVTZ
   (a) YSUW (b) SVWY (c) VTWY (d) WYTS

Directions (10-15): In each of the following questions, find the odd number/letters/word from the given alternatives.

10. (a) PQXZ (b) BCQN (c) ABDF (d) MNPR

11. (a) ABYZ (b) CDWX (c) EFUV (d) GHTV

12. (a) 626 (b) 841 (c) 962 (d) 1090

13. (a) 5720 (b) 6710 (c) 2640 (d) 4270

14. (a) Swimming (b) Sailing (c) Dividing (d) Driving

15. (a) Perception (b) Discernment (c) Penetration (d) Insinuation

Directions: In the following question from among the given alternative select the one in which the set of numbers is most like the set of number given in the questions.

Give Set: (4, 25, 81)

16. (a) (4, 36, 79) (b) (9, 48, 81) (c) (16, 64, 100) (d) (9, 49, 143)
17. In the following question, number of letters are skipped in between by a particular rule. Which of the following series observes the rule?
   (a) BAFHTU (b) ACEGJL (c) ACFJOU (d) ADFHJL

Directions: In the following question, which one of the given response would be a meaningful order of the following?

18. (1) Ocean (2) Rivulet (3) Sea (4) Glacier (5) River
   (a) 5, 2, 3, 1, 4 (b) 4, 2, 5, 3, 1 (c) 5, 2, 3, 4, 1 (d) 4, 2, 1, 3, 5

Directions: Arrange the following words as per order in the dictionary.

19. (1) Preposition (2) Preperatively (3) Preposterous (4) Preponderate (5) Prepossess
   (a) 2, 4, 1, 5, 3 (b) 1, 5, 2, 4, 3 (c) 5, 4, 2, 3, 1 (d) 4, 2, 5, 1, 3

20. Which one of set of letters when sequentially placed at the gaps in the given letter series shall complete it?
   Ac__cab__baca__aba__aca__
   (a) acbcc (b) aacbcb (c) babbb (d) bcbba

Directions (21-24): In each of the following questions, a series is given, with one/two term(s) missing. Choose the correct alternative from the given ones that will complete the series.

21. __?__DREQ, GUHT, JXKW
   (a) EFRS (b) TGSF (c) JWVI (d) AOBN

22. 56, 90, 132, 184, 248, __?__
   (a) 368 (b) 316 (c) 260 (d) 348

23. 0, 4, 8, 24, 64, 176, __?__
   (a) 180 (b) 480 (c) 280 (d) 300

24. WTPMIFB__?__ __?__
   (a) ZV (b) XU (c) YU (d) YV

25. Mrs. Sushella celebrated her wedding anniversary on Tuesday, 30th September 1997. When will she celebrate her next wedding anniversary on the same day?
   (a) 30 September 2003 (b) 30 September 2004 (c) 30 September 2002 (d) 30 October 2003

26. A clock gains five minutes every hour. What will be the angle traversed by the second hand in one minute?
   (a) 360° (b) 360.5° (c) 390° (d) 380°

27. B is twice as odd as A but twice younger than F. C is half the age of A but is twice older than D. Who is the second oldest?
   (a) B (b) F (c) D (d) C

28. A two member committee comprising of one male and one female member is to be constituted out of five males and three females. Among the females, Ms. A refuses to be a member of the committee in which Mr. B is taken as the member. In how many different ways can the committee be constituted?
   (a) 11 (b) 12 (c) 13 (d) 14

29. Find the wrong number in the series.
   6, 12, 21, 32, 45, 60
   (a) 6 (b) 12 (c) 21 (d) 32

30. Ramesh ranks 13th in a class of 33 students. There are 5 students below Suresh rankwise. How many students are there between Ramesh and Suresh?
   (a) 12 (b) 14 (c) 15 (d) 16
31. Naresh’s age is 4 years 4 years less than twice the age of his brother. Which of the following represents the equation to find his age?
   (a) 2x + 4  (b) 4x + 2  
   (c) x – 4  (d) 2x – 4

32. Suresh’s sister is the wife of Ram. Ram is Rani’s brother. Ram’s father is Madhur.  
   Sheetal is Ram’s grandmother. Rema is Sheetal’s daughter-in-law. Rohit is Rani’s brother’s son. Who is Rohit to Suresh?
   (a) Brother-in-law  (b) Son  
   (c) Brother  (d) Nephew

33. In a survey, 70% of those surveyed owned a car and 75% of those surveyed owned a TV.  
   If 55% owned both a car and a TV, what percent of those surveyed did not own either a car or a TV?
   (a) 25%  (b) 20%  
   (c) 10%  (d) 5%

34. If DANCE is coded as GXQZH then how will RIGHT be coded?
   (a) UFJEW  (b) SGKFX  
   (c) UFJWE  (d) UFWJE

35. If LOSE is coded as 1357 and GAIN is coded as 2468, what do the figures 84615 stand for?
   (a) NAILS  (b) SNAIL  
   (c) LANES  (d) SLAIN

36. A statement is given followed by four alternative arguments. Select the alternative which is most appropriate.  
   Statements:
   Is it necessary that education should be job oriented?
   Arguments:
   I. Yes, the aim of education is to prepare person for earning.
   II. Yes, educated person should stand on his own feet after completion of education.
   III. No, education should be for sake of knowledge only.
   IV. No, one may take up agriculture where education is not necessary.
   (a) Only I and II arguments are strong
   (b) Only III and IV argument are strong
   (c) Only I argument is strong
   (d) Only I and III arguments are strong

37. A man started walking West. He turned right, then right again and finally turned left.  
   Towards which direction was he walking now?
   (a) North  (b) South  
   (c) West  (d) East

38. Sudha travels 8 km to the South. Then she turns to the right and walks 4 km. Then again the turns to her right and moves 8 km forward. How many km away is she from the starting point?
   (a) 7  (b) 6  
   (c) 4  (d) 8

39. From the given alternative words, select the word which cannot be formed using the letters of the given words: ‘COMPREHENSION’
   (a) MUTUAL  (b) LIMITATION  
   (c) ONION  (d) PREACH

40. From the given alternative words, select the word which can be formed using the letters of the given word: ‘MULTIPLICATION’
   (a) MUTUAL  (b) LIMITATION  
   (c) APPLICATION  (d) NOTION

Directions (41-42): In each of the following questions, select the missing number from the given response.

41. 

   6
   5
   125
   ?

   (a) 127  (b) 31  
   (c) 217  (d) 328
42. If ‘–’ stands for division ‘+’ stands for subtraction, ‘÷’ stands for multiplication, ‘×’ stands for addition, then which one of the following equations is correct?

(a) 70 – 2 + 4 ÷ 5 × 6 = 44  
(b) 70 – 2 + 4 ÷ 5 × 6 = 21  
(c) 70 – 2 + 4 ÷ 5 × 6 = 341  
(d) 70 – 2 + 4 ÷ 5 × 6 = 36

43. If ‘–’ stands for division ‘+’ stands for subtraction, ‘÷’ stands for multiplication, ‘×’ stands for addition, then which one of the following equations is correct?

(a) 70 – 2 + 4 ÷ 5 × 6 = 44  
(b) 70 – 2 + 4 ÷ 5 × 6 = 21  
(c) 70 – 2 + 4 ÷ 5 × 6 = 341  
(d) 70 – 2 + 4 ÷ 5 × 6 = 36

44. The school result is increasing year after year. Forecast the result of 2012 from the following information.

<table>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>34.25%</td>
<td>36.75%</td>
<td>39.75%</td>
<td>43.25%</td>
<td>47.25%</td>
<td>51.75%</td>
<td>?</td>
</tr>
</tbody>
</table>

(a) 51.75%  
(b) 56.75%  
(c) 48.00%  
(d) 57.25%

45. Which diagram correctly represents the relationship between politicians, poets and women?

(a)  
(b)  
(c)  
(d)

46. How many triangles are there in the following figures?

(a) 29  
(b) 27  
(c) 23  
(d) 30

47. Some equations are solved on the basis of a certain system. Find the correct answer for the unsolved equation on that basis.

If 324 × 289 = 35, 441 × 484 = 43, 625 × 400 = 45, find the value of 256 × 729.

(a) 33  
(b) 35  
(c) 43  
(d) 34

Directions: From the given answer figures, select the one in which the question figures is hidden/ embedded.

48. Question Figure:

Answer figures:

(a)  
(b)  
(c)  
(d)

Directions: If a mirror is placed on the line MN, then which of the answer figures is the correct image of the given question figure?

49. Question Figure:

Answer figures:

(a)  
(b)  
(c)  
(d)
PART – B
GENERAL AWARENESS

51. In the budget for 2011-2012, the fiscal deficit (% of GDP) for 2011-2012 has been projected at
   (a) 5.1  (b) 5.0  (c) 4.6  (d) 3.4

52. Which was described by Dr. B.R. Ambedkar as the ‘heart and soul’ of the Constitution?
   (a) Right to Equality
   (b) Right against Exploitation
   (c) Right to Constitutional Remedies
   (d) Rights to Freedom of Religion

53. Which is not the concern of the local government?
   (a) Public Health
   (b) Sanitation
   (c) Law and order
   (d) Public Utility Services

54. In India, the concept of single citizenship is adopted from
   (a) England  (b) U.S.A.  (c) Canada  (d) France

55. Who had proposed partyless democracy in India?
   (a) Jaya Prakash Narayan
   (b) Mahatma Gandhi
   (c) Vinoba Bhave
   (d) S.A. Dange

56. Disinvestment in Public Sector is called
   (a) Liberalisation
   (b) Globalisation
   (c) Industrialisation
   (d) Privatisation

57. ‘Darwin finches’ refers to a group of
   (a) Fishes  (b) Lizards
   (c) Birds    (d) Amphibians

58. An individual’s actual standard of living can be assessed by
   (a) Gross National Income
   (b) Net National Income
   (c) Per Capita Income
   (d) Disposable Personal Income

59. As announced by the Finance Minister in his Budget speech on 28th February 2011, with a view to assist States in modernising their stamp and registration administration, E-stamping is expected to be rolled out in all the districts of different States in a period of
   (a) one year  (b) two year
   (c) three year  (d) five year

60. Which Sikh Guru called himself the ‘Sachcha Badshah’?
   (a) Guru Gobind Singh
   (b) Guru Hargoving
   (c) Guru Tegh Bahadur
   (d) Guru Arjun Dev

61. The Civil Disobedience Movement was launched by Mahatma Gandhi in
   (a) 1928  (b) 1930
   (c) 1931  (d) 1922

62. What is the maximum strength prescribed for State Legislative Assemblies?
   (a) 350  (b) 600
   (c) 500  (d) 750

63. Fa-hien visited India during the region of
   (a) Chandragupta II
   (b) Samundragupta
   (c) Ramagupta
   (d) Kumaragupta

64. At which place in Bengal was the East India Company given permission to trade and build a factory by the Mughals in 1651?
   (a) Calcutta
   (b) Cassim Bazar
   (c) Singur
   (d) Burdwan

65. Diu is an island off
   (a) Daman
   (b) Goa
   (c) Gujarat
   (d) Maharashtra

66. Which from the following is a land-locked sea?
   (a) Red Sea  (b) Timor Sea
   (c) North Sea  (d) Aral Sea
67. Shivasamudram Falls is found in the course of river
   (a) Krishna    (b) Godavari
   (c) Cauvery    (d) Mahanandi

68. Who gave the slogan "Inquilab Zindabad"?
   (a) Chandrashekhar Azad
   (b) Subhash Chandra Bose
   (c) Bhagat Singh
   (d) Iqbal

69. The position of India Railways network in the world is
   (a) second    (b) third
   (c) fourth     (d) fifth

70. The oldest international airline is
   (a) Dutch KLM
   (b) Air Canada
   (c) Qantas Airways
   (d) Air Sahara

71. Which of the following can be used to absorb neutrons to control the chain reaction during nuclear fission?
   (a) Boron    (b) Heavy water
   (c) Uranium  (d) Plutonium

72. Hydrogen bomb is based on the principle of
   (a) controlled fission reaction
   (b) uncontrolled fission reaction
   (c) controlled fusion reaction
   (d) uncontrolled fusion reaction

73. Troposphere is the hottest part of the atmosphere because
   (a) it is closest to the Sun
   (b) there are charged particles in it
   (c) it is heated by the Earth’s surface
   (d) heat is generated in it

74. The outermost layer of the Sun is called
   (a) Chromosphere
   (b) Photosphere
   (c) Corona
   (d) Lithosphere

75. Where was India’s computer installed?
   (a) Indian Institute of Technology, Delhi
   (b) Indian Institute of Science, Bangalore
   (c) Indian Iron & Steel Co. Ltd., Bumpur
   (d) Indian Statistical Institute, Calcutta

76. The dried flower buds are used as a spice in
   (a) Cardamom    (b) Cinnamon
   (c) Cloves      (d) Saffron

77. The tissue in man where no cell division occurs after birth is
   (a) skeletal    (b) nerves
   (c) connective (d) germinal

78. DNA fingerprinting is used to identify the
   (a) Parents (b) Rapist
   (c) Thieves  (d) All the above

79. The normal cholesterol level in human blood is
   (a) 80 – 120 mg%
   (b) 120 – 140 mg%
   (c) 140 – 180 mg%
   (d) 180 – 200 mg%

80. Which of the following are warm-blooded animals?
   (a) Whales
   (b) Whale Sharks
   (c) Alytes
   (d) Draco

81. Syrinx is the voice box in
   (a) Amphibians (b) Reptiles
   (c) Birds     (d) Mammals

82. The largest ecosystem of the Earth is
   (a) Biome        (b) Hydrosphere
   (c) Lithosphere (d) Biosphere

83. In a food chain, the solar energy utilized by plants is only
   (a) 10 per cent
   (b) 1 per cent
   (c) 0.1 per cent
   (d) 0.01 per cent

84. Supersonic jet causes pollution by thinning of
   (a) O₃ layer    (b) O₂ layer
   (c) SO₂ layer   (d) CO₂ layer

85. OTEC stand for
   (a) Ocean Thermal Energy Conservation
   (b) Oil and Thermal Energy Conservation
   (c) Ocean Thermal Energy Conversion
   (d) Ocean Thermal Energy Conversion
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>86.</td>
<td>As per Railway Budget for 2011-2012, the senior citizen concession for men has been increased from (a) 25% to 30% (b) 30% to 40% (c) 40% to 50% (d) 30% to 50%</td>
</tr>
<tr>
<td>87.</td>
<td>The monster earthquake-cum-tsunami which hit Japan on March 11, 2011 has moved the country's main island, Honshu, by about (a) two feet (b) three feet (c) five feet (d) eight feet</td>
</tr>
<tr>
<td>88.</td>
<td>What is the commonly used unit for measuring the speed of data transmission? (a) Mega Hertz (b) Character per second (c) Bits per second (d) Nano seconds</td>
</tr>
<tr>
<td>89.</td>
<td>Which type of reaction produces the most harmful radiation? (a) Fusion reaction (b) Fission reaction (c) Chemical reaction (d) Photo-Chemical reaction</td>
</tr>
<tr>
<td>90.</td>
<td>Which type of glass is used for making glass reinforced plastic? (a) Pyrex glass (b) Flint glass (c) Quartz glass (d) Fibre glass</td>
</tr>
<tr>
<td>91.</td>
<td>Which of the following metals causes Itai-Itai disease? (a) Cadmium (b) Chromium (c) Cobalt (d) Copper</td>
</tr>
<tr>
<td>92.</td>
<td>Glycol is added to aviation gasoline because it (a) reduces evaporation of petrol (b) increases efficiency of petrol (c) prevents freezing of petrol (d) reduces consumption of petrol</td>
</tr>
<tr>
<td>93.</td>
<td>Who invented penicillin? (a) Alexander Fleming (b) Louis Pasteur (c) Dresser (d) Edward Jenner</td>
</tr>
<tr>
<td>94.</td>
<td>2018 FIFA World Cup would be held in (a) Russia (b) Qatar (c) France (d) Netherlands</td>
</tr>
<tr>
<td>95.</td>
<td>Who of the following was not the recipient of Nobel Prize in Economics 2010? (a) Peter A. Diamond (b) Christopher Pissarides (c) Lui Xiaobo (d) Dale Mortensen</td>
</tr>
<tr>
<td>96.</td>
<td>Which troubled model was recalled recently by the Indian automobile giant Maruti Suzuki for replacement of faulty fuel pump gasket? (a) Maruti 800 (b) Maruti A-Star (c) Wagon R (d) Baleno</td>
</tr>
<tr>
<td>97.</td>
<td>As a part of Human Resource Development Ministry's 'brain gain' policy to attract global talent, 14 world class universities to attract global talents are proposed to be set up in various states. Name the state from the following where no university of the aforesaid type is proposed to be located. (a) Punjab (b) Bihar (c) Rajasthan (d) Uttarakhand</td>
</tr>
<tr>
<td>98.</td>
<td>Who discovered South Pole? (a) Robert Peary (b) Amundsen (c) John Cabot (d) Tasman</td>
</tr>
<tr>
<td>99.</td>
<td>Which of the following folk dances is associated with Rajasthan? (a) Rauf (b) Jhora (c) Veedhi (d) Suisini</td>
</tr>
<tr>
<td>100.</td>
<td>Which of the following books is authored by V.S. Naipalu? (a) The Rediscovery of India (b) A House for Mr. Biswas (c) Witness the Night (d) Tender Hooks</td>
</tr>
</tbody>
</table>
PART – C
NUMERICAL APTITUDE

101. If \( p = 124 \), \( \sqrt{p(p^2 + 3p + 3)} + 1 = ? \)
   (a) 5    (b) 7
   (c) 123  (d) 125

102. If \( \sqrt{1 - \frac{x^2}{100}} = \frac{3}{5} \), then \( x \) equals
   (a) 2    (b) 4
   (c) 16   (d) \( 136^{1/3} \)

103. I multiplied a natural number by 18 and another by 21 and added the products. Which one of the following could be the sum?
   (a) 2007  (b) 2008
   (c) 2006  (d) 2002

104. The product of two numbers is 45 and their difference is 4. The sum of squares of the two numbers is
   (a) 135   (b) 240
   (c) 73    (d) 106

105. \( \sqrt{8 + \sqrt{57 + \sqrt{38 + \sqrt{108 + \sqrt{169}}}}} \) = ?
   (a) 4    (b) 6
   (c) 8    (d) 10

106. The square root of \( 14 + 6\sqrt{5} \) is
   (a) \( 2 + \sqrt{5} \)   (b) \( 3 + \sqrt{5} \)
   (c) \( 5 + \sqrt{3} \)   (d) \( 3 + 2\sqrt{5} \)

107. When \( 2^{31} \) is divided by 5 the remainder is
   (a) 4    (b) 3
   (c) 2    (d) 1

108. The value of \( \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{2}{3}}}} \) is
   (a) \( \frac{21}{13} \) (b) \( \frac{17}{3} \)
   (c) \( \frac{34}{21} \) (d) \( \frac{8}{3} \)

109. The unit digit in the product \( (122)^{173} \) is
   (a) 2    (b) 4
   (c) 6    (d) 8

110. The value of \( \frac{2 + \sqrt{3}}{2 - \sqrt{3}} + \frac{2 - \sqrt{3}}{2 + \sqrt{3}} + \sqrt{3} + 1 \) is
   (a) \( 16 + \sqrt{3} \)   (b) \( 4 - \sqrt{3} \)
   (c) \( 2 - \sqrt{3} \)   (d) \( 2 + \sqrt{3} \)

111. If \( a \cdot b = 2a + 3b - ab \), then the value of \( (3 \cdot 5 + 5 \cdot 3) \) is
   (a) 10   (b) 6
   (c) 4    (d) 2

112. Simplify:
   \[
   \frac{0.0347 \times 0.0347 \times 0.347 + (0.9653)^3}{(0.347)^2 - (0.347) + (0.09653)^2}
   \]
   (a) 0.9306   (b) 1.0009
   (c) 1.0050   (d) 15

113. A copper wire is bent in the form of an equilateral triangle, and has area \( 121\sqrt{3} \) cm\(^2\). If the same wire is bent into the form of a circle, the area (in cm\(^2\)) enclosed by the wire
   (Take \( \pi = \frac{22}{7} \))
   (a) 364.5   (b) 693.5
   (c) 346.5   (d) 639.5

114. A child reshapes a cone made up of clay of height 24 and radius 6cm into a sphere. The radius (in cm) of the sphere is
   (a) 6    (b) 12
   (c) 24   (d) 48

115. Water flows into a tank which is 200m long and 150m wide, through a pipe of cross-section 0.3m \( \times \) 0.2m at 20 km/hour. Then
the time (in hour) for the water level in the tank to reach 8cm is
(a) 50 (b) 120
(c) 150 (d) 200

116. The product of two numbers is 2028 and their H.C.F. is 13. The number of such pairs is
(a) 1 (b) 2
(c) 3 (d) 4

117. Two equal vessels are filled with the mixture of water and milk in the ratio of 3:4 and 5:3 respectively. If the mixtures are poured into a third vessel, the ratio of water and milk in the third vessel will be
(a) 15 : 12 (b) 53 : 59
(c) 20 : 9 (d) 59 : 53

118. I am three times as old as my son. 15 years hence, I will be twice as old as my son. The sum of our ages is
(a) 48 years (b) 60 years
(c) 64 years (d) 72 years

119. Three bells ring simultaneously at 11 a.m. They ring at regular intervals of 20 minutes, 30 minutes, 40 minutes respectively. The time when all the three ring together next is
(a) 2 p.m. (b) 1 p.m.
(c) 1.15 p.m. (d) 1.30 p.m.

120. A and B together can do a works in 12 days. B and C together do it in 15 days. If A’s efficiency is twice that of C, then the days required for B alone to finish the work is
(a) 60 (b) 30
(c) 15 (d) 15

121. A and B can do a work in 12 days, B and C can do the same work in 15 days, C and A can do the same time work in 20 days. The time taken by A, B and C to do the same work is
(a) 5 days (b) 10 days
(c) 15 days (d) 20 days

122. A is 50% as efficient as B. C does half of the work done by A and B together. If C alone does the work in 20 days, then A, B and C together can do the work in
(a) \( \frac{5}{2} \) days (b) \( \frac{2}{3} \) days
(c) 6 days (d) 7 days

123. The ratio of the volumes of water and glycerine in 240cc of a mixture is 1 : 3. The quantity of water (in cc) that should be added to the mixture so that the new ratio of the volume of water and glycerine becomes 2:3 is
(a) 55 (b) 60
(c) 62.5 (d) 64

124. At present, the ratio of the ages of Maya and Chhaya is 6:5 and fifteen years from now, the ratio will get changed to 9:8. Maya’s present age is
(a) 21 years (b) 24 years
(c) 30 years (d) 40 years

125. The ratio of the income to the expenditure of a family is 10:7. If the family’s expenses are Rs. 10,500, then savings of the family is
(a) Rs. 4,500 (b) Rs. 10,000
(c) Rs. 4,000 (d) Rs. 5,000

126. The average mathematics marks of two Sections A and B of Class IX in the annual examination is 74. The average marks of Section A is 77.5 and that of Section B is 70. The ratio of the number of students of Section A and B is
(a) 7 : 8 (b) 7 : 5
(c) 8 : 7 (d) 8 : 5

127. The diameter of a wheel is 98 cm. The number of revolutions in which it will have to cover a distance of 1540 m is
(a) 500 (b) 600
(c) 700 (d) 800

128. In an equilateral triangle ABC of side 10cm,
the side BC is trisected at D. Then the length (in cm) of AD is
(a) $3\sqrt{7}$  (b) $7\sqrt{3}$  
(c) $\frac{10\sqrt{7}}{3}$  (d) $\frac{7\sqrt{10}}{3}$

130. The cost price of an article is Rs. 800. After allowing a discount of 10%, a gain of 12.5% was made. Then the marked price of the article is
(a) Rs. 1,000  (b) Rs. 1,100  
(c) Rs. 1,200  (d) Rs. 1,300

131. A man bought an article listed at Rs. 500 with a discount of 20% offered on the list price. What additional discount must be offered to man to bring the net price to Rs. 1,104?
(a) 8%  (b) 10%  
(c) 12%  (d) 15%

132. If $\frac{a}{b} = \frac{c}{d} = \frac{e}{f} = 3$,
then $\frac{2a^2 + 3c^2 + 4e^2}{2b^2 + 3d^2 + 4f^2} = ?$
(a) 2  (b) 3  
(c) 4  (d) 9

133. The floor of a room is of size 4m × 3m and its height is 3m. The walls and ceiling of the room require painting. The area to be painted is
(a) 66 m²  (b) 54 m²  
(c) 43 m²  (d) 33 m²

134. When the price of an article was reduced by 20% its sale increased by 80%. What was the net effect on the sale?
(a) 44% increase  (b) 44% decrease  
(c) 66% increase  (d) 66% decrease

135. The price of sugar goes up by 20%. If a housewife wants the expenses on sugar to remain the same, she should reduce the consumption by
(a) $15\frac{1}{5}$%  (b) $13\frac{2}{3}$%  
(c) 20%  (d) 25%

136. In a factory 60% of the workers are above 30 years and of these 75% are males and the rest are females. If there are 1350 male workers above 30 years, the total number of workers in the factory
(a) 3000  (b) 2000  
(c) 1800  (d) 1500

137. Walking at $\frac{3}{4}$ of his usual speed, a man is $\frac{1}{2}$ hours late. His usual time to cover the same distance, in hours, is
(a) $4\frac{1}{2}$  (b) 4  
(c) $5\frac{1}{2}$  (d) 5

138. The selling price of 10 oranges is the cost price of 13 oranges. Then the profit percentage is
(a) 30%  (b) 10%  
(c) 13%  (d) 3%

139. The marked price of a ratio is Rs. 480. The shopkeeper allows a discount at 10% and gains 8%. If no discount is allowed, his gain percent would be
(a) 18%  (b) 18.5%  
(c) 20.5%  (d) 20%

140. A man sold 20 apples for Rs. 1000 and gained 20%. How many apples did he buy for Rs. 100?
(a) 20  (b) 22  
(c) 24  (d) 25
141. A rectangular sheet of metal is 40 cm by 15 cm. Equal squares of side 4 cm are cut off at the corners and the remainder is folded up to form an open rectangular box. The volume of the box is
(a) 896 cm$^3$  (b) 986 cm$^3$
(c) 600 cm$^3$  (d) 916 cm$^3$

142. If 78 is divided into three parts which are in the ratio $1 : \frac{1}{3} : \frac{1}{6}$, the middle part is
(a) $9\frac{1}{3}$  (b) 13
(c) $17\frac{1}{3}$  (d) $18\frac{1}{3}$

143. The simple interest on a sum of money is $\frac{1}{9}$ of the principle and the number of years is equal to rate per cent annum. The rate per annum is
(a) 3%  (b) $\frac{1}{3}$%
(c) $\frac{3}{10}$%  (d) $\frac{3}{10}$%

144. The difference between simple interest and compound interest of a certain sum of money at 20% per annum for 2 years is Rs. 48. Then the sum is
(a) Rs. 1,000  (b) Rs. 1,200
(c) Rs. 1,500  (d) Rs. 2,000

145. Shri X goes to his office by scooter at a speed of 30 km/h and reaches 6 minutes earlier. If he goes at a speed of 24 km/h, he reaches 5 minutes late. The distance of his office is
(a) 20 km  (b) 21 km
(c) 22 km  (d) 24 km

146. A sum of money becomes eight times in 3 years, if the rate is compounded annually. In how much time will the same amount at the same compound rate become sixteen times?
(a) 6 years  (b) 4 years
(c) 8 years  (d) 5 years

147. If the total income of the family is Rs. 25,000, then the amount spent on Rent and Food together is
(a) Rs. 17,250  (b) Rs. 14,750
(c) Rs. 11,250  (d) Rs. 8,500

148. What is the ratio of the expenses of Education to the expenses on Food?
(a) 1 : 3  (b) 3 : 1
(c) 3 : 5  (d) 5 : 3

149. Expenditure on Rent is what percent of expenditure of Fuel?
(a) 135%  (b) 156%
(c) 167%  (d) 172%

150. Which three expenditures together have a central angle of 108°?
(a) Fuel, Clothing and Others  (b) Fuel, Education and Others
(c) Clothing, Rent and Others  (d) Education, Rent and Others
PART – D
ENGLISH COMPREHENSION

Directions (151-155): In the following question, some of the sentences have errors and some are correct. Find out which part of a sentence has an error. The number of the part is your answer. If a sentence is free from errors, then you answer is (d) i.e., No error.

151. A senior doctor (1) / expressed concern (2) / about physicians recommended the vaccine. (3) / No error. (4)
152. We have discussing (1) / all the known mechanisms (2) / of physical growth, (3) / No error. (4)
153. Children enjoy listening to (1) / ghosts stories (2) / especially on Halloween night. (3) / No error. (4)
154. I (1) / have (2) / many works to do. (3) / No error. (4)
155. There are so many filths (1) / all around (2) / the place. (3) / No error. (4)

Directions (156–160): In the following questions, sentences are given with blanks to be filled in with an appropriate word. Four alternatives are suggested for each question. Choose the correct alternative out of the four.

156. The building is not safe and must be _____ down.
   (a) pull   (b) pulling   (c) pulled   (d) pulls
157. There is something wonderful ____ him.
   (a) of   (b) about   (c) for   (d) inside
158. The song in the play cannot be deleted it is _____ to the story.
   (a) intervened   (b) innate   (c) exactly   (d) integral
159. She remained a _____ all her life.
   (a) spinster   (b) bachelor   (c) unmarried   (d) single

160. Do not stay in the grasslands after dark, as some animals become ____ when they see humans.
   (a) provoked   (b) alerted   (c) aggressive   (d) threatened

Directions (161-165): In the following, questions out of the four alternatives, choose one which best expresses the meaning of the given word.

161. LUCIDITY
   (a) Fluidity   (b) Politeness   (c) Clarity   (d) Fluency
162. INDICT
   (a) Implicate   (b) Elude   (c) Appreciate   (d) Judge
163. DELUGE
   (a) Confusion   (b) Deception   (c) Flood   (d) Weapon
164. PREPONDERANCE
   (A) Pre-eminence   (B) Dominance   (C) Domineering   (D) Preoccupation

Directions (166-170): In the following question no. 166 to 170, out of the four alternatives, choose the word opposite in meaning to the given word.

166. INVINCIBLE
   (a) Small   (b) Invisible   (c) Vulnerable   (d) Reachable
167. INOFFENSIVE
   (a) Sensitive   (b) Organic   (c) Sensible   (d) Rude
168. DIVULGE
   (a) Conceal   (b) Disguise   (c) Oppress   (d) Reveal
169. DISCORD
   (a) Harmony   (b) Serenity   (c) Acceptance   (d) Placidity
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170. MAMMOTH
(a) Quiet (b) Significant
(c) Huge (d) Small

Directions (171-175): In the following four alternatives are given for the meaning of the given Idiom/Phrase. Choose the alternative which best expresses the meaning of the Idiom/Phrase.

171. To take to heart
(a) to be encouraged
(b) to grieve over
(c) to like
(d) to hate

172. Yeoman’s service
(a) medical help
(b) excellent work
(c) social work
(d) hard work

173. To face the music
(a) to enjoy a musical recital
(b) to bear the consequences
(c) to live in a pleasant atmosphere
(d) to have a difficult time

174. To put up with
(a) to accommodate
(b) to adjust
(c) to understand
(d) to tolerate

175. To call it a day
(a) to conclude proceedings
(b) to initiate proceedings
(c) to work through the day
(d) None of the above

Directions (176-180): In the following questions, a sentence or bold part thereof is given which may need improvement. Alternative are given at (A), (B) and (C) below, which may be a better option. In case, no improvement is needed, your answer is (D).

176. The man whom I thought was thoroughly honest proved to be a swindler.
(a) The man whom I thought was thoroughly honest proved as swindler.
(b) The man who I thought was thoroughly honest proved to be a swindler.
(c) The man to whom I thought was thoroughly honest proved to be a swindler.
(d) No improvement

177. No sooner had the dividend been declared, the notices were sent out.
(a) The company had hardly declared the dividend till the notices were sent for mailing.
(b) They had no sooner declared to dividend then the notices were sent out.
(c) Hardly had the dividend been declared than the notices were sent out.
(d) No improvement

178. Riding upon his horse, the tiger jumped at him.
(a) Riding upon the tiger, the horse jumped at him.
(b) The tiger jumped at him while he was riding upon his horse.
(c) The tiger rode at him while he was jumping upon his horse.
(d) No improvement

179. In black and white must have your terms down.
(a) I must have in black in white your terms down.
(b) I must have your terms in black and white down.
(c) I must have your terms down in black and white.
(d) No improvement

180. When we are came out of the restaurant it was half past eleven.
(a) When we had come out of the restaurant
(b) After we came out of the restaurant
(c) When we have come out of the restaurant
(d) No improvement

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Directions (181-185): In the following questions, out of the four alternatives, choose the one which can be substituted for the given words/sentence.

181. Code of diplomatic etiquette and precedence
   (a) Statesmanship
   (b) Diplomacy
   (c) Hierarchy
   (d) Protocol

182. To renounce a high position of authority or control
   (a) Abduct
   (b) Abandon
   (c) Abort
   (d) Abdicate

183. Not to be moved by entreaty
   (a) Rigorous
   (b) Negligent
   (c) Inexorable
   (d) Despotic

184. An object or portion serving as a sample
   (a) Specification
   (b) Spectre
   (c) Spectacle
   (d) Specimen

185. The practice of submitting a proposal to popular vote
   (a) Election
   (b) Reference
   (c) Popularity
   (d) Referendum

Directions (186-190): In the following questions, groups of four words are given. In each group, one word is correctly spelt. Find the correctly spelt word.

186. (a) mandatory
   (b) circulatory
   (c) temporary
   (d) regulatory

187. (a) convinience
   (b) initiative
   (c) concessional
   (d) exaggerate

188. (a) Dialogue
   (b) giraffe
   (c) scissors
   (d) humourous

189. (a) assiduous
   (b) nefarious
   (c) macabre
   (d) loquacious

190. (a) cortege
   (b) damage
   (c) milege
   (d) plumege

Directions (191-200): In the following passage some of the words have been left out. First read the passage over and try to understand what it is about. Then fill the blanks with the help of the alternative given.

PASSAGE

Science means knowledge, but not all knowledge is science. I know from my own eyesight that our dog Chippy lies papaya; I know from a book that Akbar was the (191) of Babar, and (192) in 1605; and I know (193) the ratio that India did not do well in the (194) Test matches. We can call these (195) of knowledge (196) but they are not science.

Science (197) with facts, but not with facts which have (198) to do with each other, like the facts about our dog, cricket and the Mughal ruler; those facts are not related (199), and so have nothing (200) with science. Science starts with observation.

191. (a) grandson
   (b) grandfather
   (c) grand nephew
   (d) son

192. (a) gone
   (b) died
   (c) disappeared
   (d) absented

193. (a) on
   (b) in
   (c) since
   (d) from

194. (a) old
   (b) ordinary
   (c) latest
   (d) outdated

195. (a) pieces
   (b) peace
   (c) whole
   (d) block

196. (a) lies
   (b) charges
   (c) facts
   (d) blame

197. (a) starts
   (b) stops
   (c) passes
   (d) drives

198. (a) no
   (b) neither
   (c) nor
   (d) nothing

199. (a) by that way
   (b) in any way
   (c) from the side
   (d) in addition to

200. (a) to lie
   (b) to speak
   (c) to sleep
   (d) to do
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SSC COMBINED GRADUATE LEVEL EXAM
Held on:- 26-06-2011
(First Sitting)

PART A
GENERAL INTELLIGENCE & REASONING

Directions: In questions no. 1 to 9, select the related letters / words / numbers from the given alternatives.

1. 6 : 64 : 11 : ?
   (1) 144 (2) 169
   (3) 121 (4) 124

2. 123 : 4 : : 726 : ?
   (1) 23 (2) 26
   (3) 14 (4) 12

3. Fish : Scale : : Bear : ?
   (1) Feathers (2) Leaves
   (3) Fur (4) Skin

   (1) Needle : Tailor (2) Artist : Brush
   (3) Painter : Canvas (4) Teacher : Class

5. NUMBER : UEALRMN : : ALGEBRA : ?
   (1) LRBAGEA (2) BARLAGE
   (3) LERAGBA (4) LERABGA

6. BDAC : FHED : : NPMO : ?
   (1) QOTS (2) QTRC
   (3) TRQS (4) RTQS

7. FGHI : OPQR : : BCDE : ?
   (1) KLMJ (2) KLMN
   (3) IUUV (4) STUW

8. PNLJ : IGEC : : VTRP : ?
   (1) OMKI (2) RSTU
   (3) QSRC (4) RPOM

9. 17 : 60 : : 20 : ?
   (1) 57 (2) 69
   (3) 81 (4) 93

Directions: In questions no. 10 to 15, find the odd number / letters / word from the given alternatives.

10. (A) 162 (B) 405
    (C) 567 (D) 644

11. (A) 156 (B) 201
    (C) 273 (D) 345

12. (A) Flute (B) Violin
    (C) Guitar (D) Sitar

13. (A) Prod (B) Sap
    (C) Jab (D) Thrust

14. (A) JKOP (B) MNST
    (C) CABD (D) OPWX

15. (A) CAFD (B) TSWV
    (C) IGLJ (D) OMRP
16. In the following questions, number of letters are skipped in between by a particular rule. Which of the following series observes the rule?
(A) ABFGJK  (B) ACEJOU  
(C) MPQSTV  (D) ADFHJL

17. Find out the pair of numbers that does not belong to the group for lack of common property.
(A) 11 – 115  (B) 10 – 90  
(C) 9 – 72  (D) 8 – 56

Directions: Which one of the given response would be a meaningful descending order of the following?

(A) 5, 4, 3, 2, 1  (B) 5, 1, 4, 2, 3  
(C) 4, 5, 1, 2, 3  (D) 3, 4, 2, 5, 1

Directions: Arrange the following words as per order in the dictionary.

5. Dissolution
(A) 3, 1, 4, 5, 2  (B) 3, 2, 1, 4, 5  
(C) 3, 1, 4, 2, 5  (D) 3, 2, 4, 5, 1

20. Which one set of letters when sequentially placed at the gaps in the given letter series shall complete it?
_cd_cab_baca_cba_ab
(A) cabcb  (B) abcccb  
(C) bacbc  (D) bcaab

Directions: In questions no. 21 to 24 a series is given, with one / two term(s) missing. Choose the correct alternative from the given one that will complete the series.

21. 4, 169, 16, 169, ?, 144, 64
   (A) 21  (B) 81  
   (C) 36  (D) 32

22. 8, 15, 36, 99, 288, ___, ___.

23. XYZCBU VWFE ___, ___.
   (A) DR  (B) RS  
   (C) DS  (D) MN

24. reoc, pgme, nikg, lkii, ___, ___.
   (A) acfe  (B) jmgk  
   (C) efgh  (D) wxyz

25. Among her children, Ganga’s favourites are Ram and Rekha. Rekha is the mother of Sharat, who is loves most by his uncle Mithun. The head of the family is Ram Lal, who is succeeded by his sons Gopal and Mohan. Gopal and Ganga has been married for 35 years and have 3 children. What is the relation between Mithum and Mohan?
   (A) Uncle  (B) Son  
   (C) Brother  (D) No relation

26. Find the wrong number in the series.
   6, 9, 15, 22, 51, 99
   (A) 99  (B) 51  
   (C) 22  (D) 15

27. In a row of girls, Kamla is 9th from the left and Veena is 6th from the right. If they interchange their positions. Kamla becomes 25th from the left. How many girls are here in the row?
   (A) 19  (B) 20  
   (C) 18  (D) 17

28. Ravi has spent a quarter \( \frac{1}{4} \) of his life as a boy, one-fifth \( \frac{1}{5} \) as a youth, one-third \( \frac{1}{3} \) as a man and thirteen (13) years in old age. What is his present age?
   (A) 70 years  (B) 80 years  
   (C) 60 years  (D) 65 years

29. Five boys A, B, C, D, E are sitting in a park in a circle. A is facing South-West, D is facing

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South-East, B and E are right opposite A and D respectively and C is equidistant between D and B. Which direction is C facing?
(A) West      (B) South
(C) North     (D) East

30. At what time are the hands of clock together between 6 and 7?
(A) $32 \frac{8}{11}$ minutes past 6
(B) $34 \frac{8}{11}$ minutes past 6
(C) $30 \frac{8}{11}$ minutes past 6
(D) $32 \frac{5}{7}$ minutes past 6

31. Out of 100 families in the neighbourhood, 50 have radios, 75 have TVs and 25 have VCRs. Only 10 families have all three and each VCR owner also has a TV. If some families have radio only, how many have only TV?
(A) 30      (B) 35
(C) 40      (D) 45

32. Suresh was born of 4th October 1999. Shashikanth was born 6 days before Suresh. The Independence day of that year fell on Sunday. Which day was Shashikanth born?
(A) Tuesday  (B) Wednesday
(C) Monday   (D) Sunday

33. From the given alternative words, select the word which cannot be formed using the letters of the given word: ‘CONCENTRATION’
(A) CONCERN     (B) NATION
(C) TRAIN       (D) CENTRE

34. In a certain office, 1/3 of the workers are women, 1/2 of the women are married and 1/3 of the married women have children. If 3/4 of the men are married and 2/3 of the married men have children, then what part of workers are without children?
(A) $5/18$      (B) $4/9$
(C) $11/18$    (D) $17/36$

35. If a man of a moped starts from a point and rides 4 km South, then turns left and rides 2 km to turn again to the right to ride 4 km more, towards which direction is he moving?
(A) North      (B) West
(C) East       (D) South

36. Ganesh cycles towards South-West a distance of 8 m, then he moves towards East a distance of 20 m. From there he moves towards North-East a distance of 8 m, then he moves towards West a distance of 8 m, then he moves towards North-East a distance of 2 m. Then he moves towards West a distance of 4 m and then towards South-West 2 m and stops at that point. How far is he from the starting point?
(A) 12 m      (B) 10 m
(C) 8 m       (D) 6 m

37. Two statements are given followed by four inferences. Select the alternative which is most appropriate.

**Statements:**

India is becoming industrialised.
Pollution is a problem associated with industrialisation.

**Inferences:**

I. All industrial centres are polluted.
II. India is polluted.
III. Polluted nations are industrialised.
IV. India may become polluted

(A) All are appropriate
(B) None is appropriate
(C) Only IV is appropriate
(D) Only II is appropriate
word which can be formed using the letters of the given word:
‘DETERMINATION’
(A) DECLARATION  (B) NATIONAL
(C) TERMINATED  (D) DEVIATION

39. If in a certain code HYDROGEN is written as JCJZYSSD, then how can ANTIMONY be written in that code?
(A) CPVKOQPA  (B) CRZQWABO
(C) ERXMQSRC  (D) GTZOSUTE

40. If DELHI coded as 73541 and CALCUTTA as 82589662, then how can CALICUT be coded?
(A) 5279431  (B) 5978013
(C) 82501896  (D) 8543691

Directions: In questions no. 41 and 42, select the missing number from the given responses.

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41. (A) 8  (B) 3  (C) 6  (D) 36

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42. (A) 60  (B) 68  (C) 55  (D) 65

43. How many rectangles are there in the given diagram?

(A) 4  (B) 7  (C) 9  (D) 18

44. Which of the following diagrams represents the relationship among Sun, Moon and Star?

(A) (B) (C) (D)

45. Some equations have been solved on the basis of a certain system. Find the correct answer for the unsolved equation on that basis.
If 9 * 7 = 32, 13 * 7 = 120, 17 * 9 = 208, then 19 * 11 = ?
(a) 150  (b) 180  (c) 210  (d) 240

46. Forecast the Growth Rate for the year 1995 from the following data:

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(A) 7.8  (B) 8.6  (C) 9.7  (D) 9.9

47. If ‘.’ stand for ‘÷’, ‘+’ stand for ‘×’, ‘+’ for ‘.’ and ‘×’ for ‘+’, which one of the following equations is correct?
(A) 30 - 6 ÷ 4 × 2 = 27
(B) 30 ÷ 6 - 5 × 2 = 30
(C) 30 × ÷ 5 - 4 + 2 = 32
(D) 30 ÷ 6 × ÷ 4 + 2 = 40

Directions: From the given answer figures, select the one in which the question figure is hidden / embedded.

48. Question figures:
Answer figures:

Directions: If a mirror is placed on the line MN, then which of the answer figures is the correct image of the given question figures?

49. Question figures:

Answer figures:

Directions: A piece of paper is folded and cut as shown below in the question figures. From the given answer figures, indicate how it will appear when opened.

50. Question figure:

Answer figures:

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46. Select the letters that complete the first word and begin the second from the given alternatives.
   FLO(?TACK
   (A) CK     (B) OR
   (C) AT     (D) UR

47. An election 1/2 of voters vote for Anand, half of the remaining vote for Bhuvan and half of the remaining vote for Chaman. 840 persons did not vote. What percent of the entire list did not vote?
   (A) 8.4  (B) 8.5
   (C) 12.4  (D) 12.5

48. Amit is shorter than Biju but taller than Chand. Dhruv is shorter than Amit but taller than Chand and Ekta is shorter than Biju but taller than Amit. Who is the tallest person.
   (A) Biju   (B) Ekta
   (C) Amit   (D) Dhruv

49. Four books are kept on each other. K is on A, C is below B. If A is above B, then which book is at the top?
   (A) K     (B) C
   (C) A     (D) B

50. In a brick furnace there were 100 bricks, out of which \( \frac{1}{4} \) of them were broken into two and \( \frac{1}{5} \) of them broken into three pieces in the process of heating. How many full bricks were remaining?
   (A) 40    (B) 45
   (C) 55    (D) 56
51. Judicial review in the Indian Constitution is based on
   (A) Rule of Law
   (B) Due process of Law
   (C) Procedure established by Law
   (D) Precedents and Conventions

52. The Drafting of the Constitution was completed on
   (A) 26th January 1950
   (B) 26th December 1949
   (C) 26th November 1949
   (D) 30th November 1949

53. Who was the President of the Constituent Assembly?
   (A) Pt. Jawahar Lal Nehru
   (B) Sardar Patel
   (C) Dr. Rajendra Prasad
   (D) Dr. B.R. Ambedkar

54. Which innovative discussion process is introduced by the Indian Parliament to the World Parliamentary systems?
   (A) Question hour  (B) Zero hour
   (C) Resolutions
   (D) Presidential speech

55. The Judges of the Supreme Court retire at the age of
   (A) 60 years  (B) 65 years
   (C) 62 years  (D) 58 years

56. When there is an official change in the exchange rate of domestic currency, then it is called
   (A) Appreciation  (B) Depreciation
   (C) Revaluation  (D) Deflation

57. Inflation redistributes income and wealth in favour of
   (A) Pensioners  (B) Poor
   (C) Middle class  (D) Rich

58. The fringe benefit tax was introduced in the budget of
   (A) 2003-04  (B) 2004-05
   (C) 2005-06  (D) 2006-07

59. In the Budget estimates for 2011-12, and allocation of Rs. 400 crore had been made to bring in a green revolution in the East in the cropping system of
   (A) Wheat  (B) Rice
   (C) Jowar  (D) Pulses

60. As announced by the Finance Minister in his budget speech on 28-2-2011, the income tax exemption limit for individuals other than senior citizen and women has been raised to
   (A) Rs. 1,80,000  (B) Rs. 1,90,000
   (C) Rs. 2,00,000  (D) Rs. 2,50,000

61. Who among the following British persons admitted the Revolt of 1857 as a national revolt?
   (A) Lord Dalhousie  (B) Lord Canning
   (C) Lord Ellenborough  (D) Disraeli

62. The Greek ambassador sent to Chandragupta Maurya’s court was
   (A) Kautilya  (B) Seleucus Nicator
   (C) Megasthenes  (D) Justin

63. Identify the European power from whom Shivaji obtained cannons and ammunition.
   (A) The French  (B) The Portuguese
   (C) The Dutch  (D) The English

64. The call of “Back to the Vedas” was given by
   (A) Swami Vivekananda  (B) Swami Dayanand Saraswati
   (C) Aurobindo Ghosh  (D) Raja Ram Mohan Roy
65. Simon Commission was boycotted by the nationalist leaders of India because
   (A) they felt that it was only an eyewash
   (B) all the numbers of the Commission were English
   (C) the members of the Commission were biased against India
   (D) it did not meet the demands of the Indians

66. The lowest layer of the atmosphere is
   (A) Stratosphere    (B) Thermosphere
   (C) Troposphere    (D) Mesosphere

67. The Konkan Railway connects
   (A) Goa—Mangalore
      (B) Roha—Mangalore
      (C) Kanyakumari—Mangalore
      (D) Kanyakumari—Mumbai

68. Bark of this tree is used as a condiment—
   (A) Cinnamon    (B) Clove
      (C) Neem    (D) Palm

69. How much of the Earth's land surface is desert?
   (A) 1/10th    (B) 1/5th
      (C) 1/3rd    (D) 1/6th

70. Which of the following is called the 'shrimp capital of India'?
   (A) Mangalore    (B) Nagapatnam
      (C) Kochi    (D) Nellore

71. River Indus originates from
   (A) Hindukush range
      (B) Himalayan range
      (C) Karakoram range
      (D) Kailash range

72. The atmospheric air is held to the Earth by
   (A) gravity    (B) winds
      (C) clouds
      (D) rotation of the Earth

73. The function of ball bearings in a wheel is
   (A) to increase friction
   (B) to convert kinetic friction into rolling friction
   (C) to convert static friction into kinetic friction
   (D) just for convenience

74. ‘Shock-absorbers’ are usually made of steel as it
   (A) is not brittle
      (B) has lower elasticity
      (C) has higher elasticity
      (D) has no ductile property

75. The first computer made available for commercial use was
   (A) MANIAC    (B) ENIAC
      (C) UNIVAC    (D) EDSAC

76. A communication network which is used by large organizations over regional, national or global area is called
   (A) LAN    (B) WAN
      (C) MAN    (D) VAN

77. Who was the architect of North and South Blocks of the Central Secretariat in Delhi?
   (A) Sir Edward Lutyens
      (B) Hebert Baker
      (C) Robert Tor Russell
      (D) Antonin Raymond

78. Saliva helps in the digestion of
   (A) Fats    (B) Starch
      (C) Proteins    (D) Vitamins

79. The longest bone in the human body is
   (A) Ulna    (B) Humerus
      (C) Femur    (D) Tibia

80. Red data book gives information about species which are
   (a) extinct    (b) endangered
     (c) dangerous    (d) rare

81. Which of the following is the smallest bird?
   (A) Pigeon    (B) Parrot
      (C) Humming bird    (D) House sparrow

82. The time period of a pendulum when taken to the Moon would.
   (A) remain the same    (B) decrease
      (C) become zero    (D) increase

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83. Indian Army’s Operation ‘Saiyam’ was related to
(A) Kashmir
(B) Indo-China Border in the Central Region
(C) North-East
(D) Indo-Pak Border in Punjab and Rajasthan

84. Which of the following could be used as fuel in propellant or rockets?
(A) Liquid Hydrogen + Liquid Nitrogen
(B) Liquid Oxygen + Liquid Argon
(C) Liquid Nitrogen + Liquid Oxygen
(D) Liquid Hydrogen + Liquid Oxygen

85. The addition of gypsum to Portland cement helps in
(A) increasing the strength of cement
(B) rapid setting of cement
(C) preventing rapid setting of cement
(D) reduction in the cost of cement

86. White lung disease is prevalent among the workers of
(A) Paper industry
(B) Cement industry
(C) Cotton industry
(D) Pesticide industry

87. Indoform is used as an
(A) antipyretic
(B) analgesic
(C) antiseptic
(D) anaesthetic

88. An artificial ecosystem is represented by
(A) pisciculture tank
(B) agricultural land
(C) zoo
(D) aquarium

89. The constituents of automobile exhaust that can cause cancer is/are
(A) Oxides of nitrogen
(B) Carbon monoxide
(C) Polycyclic hydrocarbons
(D) Lead

90. The optimum dissolved oxygen level (in mg/litre) required for survival of aquatic organisms is
(A) 4-6
(B) 2-4
(C) 8-10
(D) 12-16

91. The word’s only floating national park is situated in
(A) Manipur
(B) Kula Lumpur
(C) Bilaspur
(D) Dispur

92. According to the latest ‘Education Development Index’ based on a series of surveys conducted by the National University of Education, Planning and Administration and released in February, 2011, the state with the highest Development Index is
(A) Tamil Nadu
(B) Kerala
(C) Punjab
(D) Gujarat

93. The ‘Project Snow Leopard’ to conserve the endangered species, launched by the Union Ministry of Environment and Forests covers the states of
(A) Jammu & Kashmir and Himachal Pradesh only
(B) Jammu & Kashmir, Himachal Pradesh and Uttarakhand only
(C) Jammu & Kashmir, Himachal Pradesh, Uttarakhand and Arunachal Pradesh only
(D) Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Arunachal Pradesh and Sikkim

94. In the Railway Budget for 2011-12, an outlay of Rs. 57,630 crore has been announced for adding new lines with length of
(A) 1000 km
(B) 1200 km
(C) 1300 km
(D) 1500 km

95. The strong earthquake-cum-tsunami which has moved Japan’s main island by a few feet and has caused the Earth’s axis to wobble is expected to lead to the shortening of the day by
(A) 1.6 microseconds
(B) 2.3 microseconds
(C) 3.1 microseconds
(D) 3.4 microseconds
96. Which of the following folk/tribal dances is associated with Uttar Pradesh?
   (A) Veedhi  (B) Thora  
   (C) Tamasha  (D) Rauf

97. Which of the following books has been written by Atiq Rahimi?
   (A) Earth and Ashes  (B) This Savage Rite  
   (C) The Red Devil  (D) Witness the Night

98. Who is the recipient of the Sahitya Akademi Award 2010 in Hindi Literature category?
   (A) Uday Prakash  (B) Laxman Dubey  
   (C) Nanjil Nanda  (D) Mangat Badal

99. The 2010 FIFA World Cup Final was held at
   (A) Paris  (B) Berlin  
   (C) Johannesburg  (D) London

100. Who of the following received Sangeet Natak Akademi’s Ustad Bismillah Khan Yuva Puruskar for 2009 in ‘Hindustani Vocal Music’?
    (A) Omkar Shrikant Dadarkar  
    (B) Ragini Chander Shekar  
    (C) Abanti Chakravorty and Sukracharya Radha  
    (D) K. Nellai Manikandan
NUMERICAL APTITUDE

101. The value of
\[ \frac{3\sqrt{2}}{\sqrt{3} + \sqrt{6}} + \frac{4\sqrt{3}}{\sqrt{6} + \sqrt{2}} + \frac{\sqrt{6}}{\sqrt{3} + \sqrt{2}} \]

is
(A) 4 (B) 0 (C) \(\sqrt{2}\) (D) \(3\sqrt{6}\)

102. \(\sqrt{6 + \sqrt{6 + \sqrt{6 + \ldots}}} = ?\)
(A) 2.3 (B) 3 (C) 6 (D) 6.3

103. The square root of \(\frac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}}\) is
(A) \(\sqrt{3} + \sqrt{2}\) (B) \(\sqrt{3} - \sqrt{2}\) (C) \(\sqrt{2} + \sqrt{3}\) (D) \(\sqrt{2} - \sqrt{3}\)

104. The remainder when \(3^{21}\) is divided by 5 is
(A) 1 (B) 2 (C) 3 (D) 4

105. The value of \(\frac{2\frac{1}{3} \cdot 1 \frac{2}{11}}{1 \frac{1}{3} + 1 \frac{1}{3} + 1 \frac{1}{3}}\) is
(A) 38 (B) 109 (C) 1 (D) 116

106. The last digit of \((1001)^{2008} + 1002\) is
(A) 0 (B) 3 (C) 4 (D) 6

107. \(\sqrt[3]{1 - \frac{127}{343}}\) is equal to
(A) \(\frac{5}{9}\) (B) \(1 - \frac{1}{7}\) (C) \(\frac{4}{7}\) (D) \(1 - \frac{2}{7}\)

108. If the sum of two numbers be multiplied by each number separately, the product so obtained are 247 and 114. The sum of the numbers is
(A) 19 (B) 20 (C) 21 (D) 23

109. Find a number, one-seventh of which exceeds its eleventh part by 100.
(A) 1925 (B) 1825 (C) \(\sqrt{1540}\) (D) 1340

110. If \(x \cdot y = (x + 3)^2 (y - 1)\), then the value of \(5 \cdot 4\) is
(A) 192 (B) 182 (C) 180 (D) 172

111. \((0.05)^2 + (0.41)^2 + (0.073)^2\)

\((0.005)^2 + (0.041)^2 + (0.073)^2\)

is
(A) 10 (B) 100 (C) 1000 (D) None of these

112. If \(9\sqrt{x} = \sqrt{12 + \sqrt{47}}\), then \(x = ?\)
(A) 2 (B) 3 (C) 4 (D) 5

113. A and B can complete a piece of work in 8 days, B and C can do it in 12 days, C and A can do it in 8 days. A, B and C together can complete it in
(A) 4 days (B) 5 days (C) 6 days (D) 7 days
114. X is 3 times as fast as Y and is able to complete the work in 40 days less than Y. Then the time in which they can complete the work together is

1) 15 days  
2) 10 days  
3) 7 1/2 days  
4) 5 days

115. A copper wire is bent in the shape of a square of area 81 cm². If the same wire is bent in the form of a semicircle, the radius (in cm) of the semicircle is (Take $\pi = \frac{22}{7}$)

A) 16  
B) 14  
C) 10  
D) 7

116. The volume (in m³) of rain water that can be collected from 1.5 hectares of ground in a rainfall of 5 cm is

A) 75  
B) 750  
C) 7500  
D) 75000

117. A river 3 m deep and 40 m wide is following at the rate of 2 km per hour. How much water (in litres) will fall into the sea in a minute?

A) 4,00,000  
B) 40,00,000  
C) 4,00,000  
D) 4,000

118. The L.C.M. of three different numbers is 120. Which of the following cannot be their H.C.F.?

A) 8  
B) 12  
C) 24  
D) 35

119. A number when divided by 49 leaves 32 as remainder. This number when divided by 7 will have the remainder as

A) 4  
B) 3  
C) 2  
D) 5

120. In an examination a student scores 4 marks for every correct answer and loses 1 mark for every wrong answer. If he attempts all 75 questions and secures 125 marks, the number of questions he attempts correctly is

A) 35  
B) 40  
C) 42  
D) 46

121. The traffic lights at three different road crossing change after 24 seconds, 36 seconds and 54 seconds respectively. If they all change simultaneously at 10 : 00 AM, then at what time will they again change simultaneously?

A) 10 : 16 : 54 AM  
B) 10 : 18 : 36 AM  
C) 10 : 17 : 02 AM  
D) 10 : 22 : 12 AM

122. A can do a work in 12 days. When he had worked for 3 days, B joined him. If they complete the work in 3 more days, in how many days can B alone finish the work?

A) 6 days  
B) 12 days  
C) 4 days  
D) 8 days

123. Among three numbers, the first is twice the second and thrice the third. If the average of the three numbers is 49.5, then the difference between the first and the third number is

A) 54  
B) 28  
C) 39.5  
D) 41.5

124. The mean of 50 numbers is 30. Later it was discovered that two entries were wrongly entered as 82 and 13 instead of 28 and 31. Find the correct mean.

A) 36.12  
B) 30.66  
C) 29.28  
D) 38.21

125. A bicycle wheel marks 5000 revolutions in moving 11 km. Then the radius of the wheel (in cm) is (Take $\pi = \frac{22}{7}$)

A) 70  
B) 35  
C) 17.5  
D) 140

126. The perimeter of a triangle is 40 cm and its area is 60 cm². If the largest side measures 17 cm, then the length (in cm) of the smallest side of the triangle is

A) 4  
B) 6  
C) 8  
D) 15

127. A shopkeeper allows a discount of 10% to his customers and still gains 20%. Find the
marked price of the article which costs Rs. 450
(A) Rs. 600  (B) Rs. 540
(C) Rs. 660  (D) Rs. 580

128. What single discount is equivalent to two successive discounts of 20% and 15%?
(A) 35%  (B) 32%
(C) 34%  (D) 30%

129. In a business partnership among A, B, C and D, the profit is shared as follows:

\[
\frac{A's \ share}{B's \ share} = \frac{B's \ share}{C's \ share} = \frac{C's \ share}{D's \ share} = \frac{1}{3}
\]

If the total profit is Rs. 4,00,000, the share of C is
(A) Rs. 1,12,500  (B) Rs. 1,37,500
(C) Rs. 90,000  (D) Rs. 2,70,000

130. A can contains a mixture of two liquids A and B in the ratio 7 : 5. When 9 litres of mixture are drawn off and the can is filled with B, the ratio of A and B becomes 7 : 9. Liters of liquid A contained by the can initially was
(A) 10  (B) 20
(C) 21  (D) 25

131. What number should be added to or subtracted from each term of the ratio 17 : 24 so that it becomes equal to 1 : 2?
(A) 5 is subtracted  (B) 10 is added
(C) 7 is added  (D) 10 is subtracted

132. The ratio of weekly incomes of A and B is 9 : 7 and the ratio of their expenditures is 4 : 3. If each saved Rs. 200 per week, then the sum of their weekly incomes is
(A) Rs. 3,600  (B) Rs. 4,200
(C) Rs. 4,800  (D) Rs. 5,600

133. If 30% of A is added to 40% of B, the answer is 80% of B. What percentage of A is B?
(A) 30%  (B) 40%
(C) 70%  (D) 75%

134. A man can row 6km/h in still water. If the speed of the current is 2 km/h, it takes 3 hours more in upstream than in the downstream for the same distance. The distance is
(A) 30 km  (B) 24 km
(C) 20 km  (D) 32 km

135. If the selling price of 10 articles is equal to the cost price of 11 articles, then the gain percent is
(A) 10  (B) 11
(C) 15  (D) 25

136. While selling a watch, a shopkeeper gives a discount of 5%. If he gives a discount of 6%, he earns Rs. 15 less as profit. What is the marked price of the watch?
(A) Rs. 1,250  (B) Rs. 1,400
(C) Rs. 1,500  (D) Rs. 750

137. Krishna purchased a number of articles at Rs. 10 for each and the same number for Rs. 14 each. He mixed then together and sold them for Rs. 13 each. Then his gain or loss percent is
(A) Loss \( \frac{1}{3} \% \)
(B) Gain \( \frac{2}{3} \% \)
(C) Loss \( \frac{2}{3} \% \)
(D) Gain \( \frac{1}{3} \% \)

138. A trader bought two horses for Rs. 19,500. He sold one at a loss of 20% and the other at a profit of 15%. If the selling price of each horse is the same, then their cost prices are respectively
(A) Rs. 10,000 and Rs. 9,500
(B) Rs. 11,000 and Rs. 8,000
(C) Rs. 12,000 and Rs. 7,500
(D) Rs. 10,500 and Rs. 9,000
139. The cost price of an article is 40% of the selling price. What percent of the cost prices is the selling price?
   (A) 140%  (B) 200%  (C) 220%  (D) 250%

140. If 90% of A = 30% of B and B = 2x% of A then the value of x is
   (A) 450  (B) 400  (C) 300  (D) 150

141. When the price of sugar decreases by 10%, a man could buy 1 kg more for Rs. 270. Then the original price of sugar per kg is
   (A) Rs. 25  (B) Rs. 30  (C) Rs. 27  (D) Rs. 32

142. If the price of sugar is raised by 25%, find by how much percent a householder must reduce his consumption of sugar so as not to increase his expenditure?
   (A) 10  (B) 20  (C) 18  (D) 25

143. The difference between the compound interest and simple interest on Rs. 10,000 for 2 years is Rs. 25. The rate of interest per annum is
   (A) 5%  (B) 7%  (C) 10%  (D) 12%

144. A student goes to school at the rate of \( \frac{21}{2} \) km/h and reaches 6 minutes late. If he travels at the speed of 3 km/h, he is 10 minutes early. The distance (in km) between the school and his house is
   (A) 5  (B) 4  (C) 3  (D) 1

145. A sum of money placed at compound interest doubles itself in 4 years. In how many years will it amount to four times itself?
   (A) 12 years  (B) 13 years  (C) 8 years  (D) 16 years

146. The simple interest on a sum of 5 years is one-fourth of the sum. The rate of interest per annum is
   (A) 5%  (B) 6%  (C) 4%  (D) 8%

Directions: (Question No. 147 to 150). The following graph shows the demand and production of cotton by 5 companies A, B, C, D and E. Study the graph and answer question 147 to 150.
147. The production of company D is how many times that of the production of the company A?
(A) 1.8  (B) 1.5  (C) 0.5  (D) 0.4

148. The demand for company B is what percent of the demand?
(A) 1.5  (B) 2.5  (C) 25  (D) 30

149. What is the ratio of companies having more demand than production to those having more production than demand?
(A) 2 : 3  (B) 4 : 1  (C) 3 : 2  (D) 1 : 4

150. What is the difference (in tonnes) between average demand and average production of the five companies taken together?
(A) 320  (B) 420  (C) 2100  (D) 1050

147. A, B and C enter into a partnership with investments in the ratio \(\frac{7}{2} : \frac{4}{3} : \frac{6}{5}\). After 4 months, A increases his share by 50% If the total profit at the end of one year be Rs. 21600, then B’s share in the profit is
(A) Rs. 2,100  (B) Rs. 2,400  (C) Rs. 3,600  (D) Rs. 4,000

148. A person travels 48 km at 12 km/h and further 48 km at 16 km/h. His average speed for the whole journey, in km/h, is
(A) 14  (B) \(\frac{13}{7}\)  (C) \(\frac{312}{7}\)  (D) \(\frac{513}{7}\)

149. The H.C.F. and L.C.M. of two numbers are 13 and 1989 respectively. If one of the numbers is 117, determine the other.
(A) 121  (B) 143  (C) 217  (D) 221

150. A sphere of radius r and a cylinder of the base radius r have equal volumes. If the height of the cylinder is h, then which of the following is true?
(A) \(4r = 3h\)  (B) \(4r = h\)  (C) \(H = 3r\)  (D) \(H = 2r\)
ENGLISH COMPREHENSION

Directions: In questions no. 151 to 155, some of the sentences have errors and some are correct. Find out which part of a sentence has an error and blacken the rectangle corresponding to the appropriated letter (A, B, C). If a sentence is free from errors, blacken the rectangle corresponding to (D) in the Answer Sheet.

151. His son (A) is (B) working (C) very (D) hardly. No error.
152. Do you know that it was I (A) who (B) had (C) done (D) this piece of beautiful work? No error.
153. The company has ordered (A) some (B) new (C) equipments. No error.
154. The future of food companies (A) seems (B) quite (C) secure (D) owed to ever-growing demand. No error.
155. The vaccine (A) when (B) hit (C) the (D) Indian market is dogged by controversy. No error.

Directions: In questions no. 156 to 160, sentences are given with blanks to be filled in with an appropriate word(s). Four alternatives are suggested for each question. Choose the correct alternative out of the four and indicate it by blackening the appropriate rectangle in the Answer Sheet.

156. If you had followed the rules, you _______ disqualified.
   (A) will not be (B) would not be (C) will not have been (D) would not have been
157. The housewife _______ the cakes burning, and ran to switch off the oven.
   (A) smelt (B) smells (C) smelled (D) smelling
158. _______ and old legend, King Shirham lived in India.
   (A) In the event of (B) Due to (C) According to (D) In reference to
159. ______ you leave no, you will be late.
   (A) Until (B) Till (C) Unless (D) Although
160. The _______ were arrested for illegally hunting the bears.
   (A) poachers (B) rangers (C) soldiers (D) villagers

Directions: In questions no. 161 to 165, out of the four alternatives, choose the one which best expresses the meaning of the given word and mark it in the Answer Sheet.

161. GENIAL
   (A) Cordial (B) Unselfish (C) Careful (D) Specific
162. ACCRUE
   (A) Accumulate (B) Accommodate (C) Grow (D) Suffice
163. LOQUACIOUS
   (A) Talkative (B) Slow (C) Content (D) Unclear
164. VINDICTIVE
   (A) Imaginative (B) Accusative (C) Spiteful (D) Aggressive

165. INCLEMENT
   (A) Selfish (B) Active (C) Unfavourable (D) Inactive

Directions: In questions no. 166 to 170, choose the word opposite in meaning to the given word and mark it in the Answer Sheet.

166. SYNTHETIC
   (A) Natural (B) Plastic (C) Cosmetic (D) Apathetic

167. ACCORD
   (A) Disagreement (B) Welcome (C) Disrespect (D) Conformity

168. INFIRMITY
   (A) Employment (B) Indisposition (C) Strength (D) Weakness

169. FEASIBLE
   (A) Useful (B) Impractical (C) Uneven (D) Important

170. METICULOUS
   (A) Forgetful (B) Destructive (C) Careless (D) Flagrant

Directions: In questions no. 171-175, four alternatives are given for the meaning of the given Indian / Phrase. Choose the alternative which best express the meaning of the Indian / Phrase and mark it in the Answer Sheet.

171. To be all at sea
   (A) a family voyage (B) lost and confused (C) in the middle of the ocean (D) a string of islands

172. To take to one’s heels
   (A) to walk slowly (B) to run away (C) to march forward (D) to hop and jump

173. To bite the dust
   (A) eat voraciously (B) have nothing to eat (C) eat roots (D) none of the above

174. A bolt from the blue
   (A) a delayed event (B) an inexplicable event (C) an unexpected event (D) an unpleasant event

175. Cold comfort
   (A) absurdity (B) deception (C) slight satisfaction (D) foolish proposal

Directions: In questions no. 176-180, a sentence or underlined part thereof is given which many need improvement. Alternatives are given of (A), (B) and (C) below, which may be a better option. In case no improvement is needed, your answer is (D). Blacken the appropriate rectangle in the Answer Sheet.

176. My friend lives in a nearly street whose name I have forgotten.
   (A) the name of which (B) which name (C) of which name (D) No improvement

177. He both won a medal and a scholarship.
   (A) He won a medal and a scholarship both. (B) Both he won a medal and a scholarship. (C) He won both a medal and a scholarship. (D) No improvement

178. He has for good left India.
   (A) He has left for good India. (B) He has left India for good. (C) Good he has left India. (D) No improvement

179. We are credibly informed that the murderer has given himself up.
   (A) We are informed that the murderer has credibly given himself up. (B) We are informed that the murdered has given credibly himself up.

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180. We generally select one of the most intelligent student of the school for this award.
(A) one of the most intelligent students of the school
(B) one of the intelligent most students of the school
(C) one of the intelligent most student of the school
(D) No improvement

Directions: In questions no. 181-185, out of the four alternatives, choose the one which can be substituted for the given words/sentence and indicate it by blackening the appropriate rectangle [ ] in the Answer Sheet.

181. Pertaining to cattle
(A) Canine  (B) Feline
(C) Bovine  (D) Verminous

182. To look at someone in an angry or threatening way
(A) Glower  (B) Gnaw
(C) Gnash  (D) Grind

183. A post with little work but high salary
(A) Director  (B) Trustee
(C) Sinecure  (D) Ombudsman

184. Something that cause death
(A) Dangerous  (B) Fatal
(C) Brutal  (D) Horrible

185. A person who writes decoratively
(A) Calligrapher  (B) Collier
(C) Choreographer  (D) Cartographer

Directions: In the following passage (questions no. 191 to 200), some of the words have been left out. First read the passage over and try to understand what it is about. Then fill in the blanks with the help of the alternatives given. Mark your answer in the Answer Sheet.

The Solar System has been a complicated wonder for the astronomers. This is a 191 to which we many never have the exact answer. Man has wondered 192 the age of the Earth 193 ancient times. There were all kinds of 194 that seemed to have the 195. But man could not begin 196 about the question scientifically until 197.

When it was proved that the 198 revolved round the Sun and the Earth was a 199 of our Solar System, and scientists knew where to 200.

191. (A) problem  (B) question
(C) matter  (D) query

192. (A) around  (B) out
(C) about  (D) on

193. (A) since  (B) during
(C) around  (D) from

194. (A) ideas  (B) opinions
(C) stories  (D) matters

195. (A) solution  (B) novel
(C) book  (D) answer
196. (A) read  (B) think  (C) Earth  (D) Mars
    (C) open  (D) guess

197. (A) now  (B) time  (C) opening  (D) centre
    (C) then  (D) ago

198. (A) Moon  (B) time  (C) think  (D) work
    (B) time

199. (A) part  (B) division
    (C) opening  (D) centre

200. (A) end  (B) begin
    (D) work
PART A

GENERAL INTELLIGENCE & REASONING

1. There are three baskets of fruits. First basket has twice the number of fruits in the 2nd basket. Third basket has \(\frac{3}{4}\) th of the fruits in the first. The average of the fruits in all the baskets is 30. What is the number of fruits in the first basket?
   (A) 20  (B) 30  (C) 35  (D) 40

2. From my house I walked 5 km towards North. I turned right and walked 3 km. Again I went one km to the south. How far am I from my house?
   (A) 7 km  (B) 6 km  (C) 4 km  (D) 5 km

3. A and B are standing as a distance of 20 km from each other on a straight East-West road. A and B start walking simultaneously eastwards and westwards respectively and both cover a distance of 5 km. Then A turns to his left the walks 10 km. B turns to his right and walks 10 km at the same speed. Then both turn to their left and cover a distance of 5 km at the same speed. What will be distance between them?
   (A) TKQKJX  (B) TKJKQX  (C) TKQKXJ  (D) TKQXJK

4. From the given alternative words, select the word which cannot be formed using the letters of the given word:
   REFORMATION
   (A) REFRAIN  (B) MOTION  (C) REFRACT  (D) FORMAT

Directions: From the given alternative words, select the word which can be formed using the letters of the given word:

5. MANUFACTURE
   (A) FRACTURE  (B) MANNER  (C) MATTER  (D) FACE

6. If in a certain language, PLAYER is coded as QNDCJX, then how SINGER will be coded in the same language?
   (A) TKQKJX  (B) TKJKQX  (C) TKQKXJ  (D) TKQXJK

7. If in a certain code, 95789 is written as EGKPT and 2436 is written as ALUR, then how will 24539 be written in that code?
   (A) ALEUT  (B) ALGTU  (C) ALGUT  (D) ALGRT
8. A statement is given followed by four alternative arguments. Select on which is most appropriate.

Statement: White clothes are worn more often in summer because
(A) they are thin and cool
(B) they are bad absorbers of heat
(C) they can be easily washed
(D) they are easily available in summer

Directions: In question nos. 9 to 17, select the related letter/word/number/figure from the given alternatives.

9. Procession : Route :: Earth : ?
   (A) Space  (B) Sun  (C) Orbit  (D) Highway

10. FERTILIZER : CROPS ::
    (A) TEACHER : EDUCATION  (B) CHLORINE : WATER
        (C) TONIC : BODY  (D) PESTICIDE : RATS

11. LOCKER : KMNBDJLDFQS :: LEFT :
    (A) KNCDSGSU  (B) KMDFEGSU  (C) KMDFEGUS  (D) KMDFEGUS

12. YWUS : BDFH :: WUSQ :
    (A) DFHJ  (B) FHJL  (C) JLNP  (D) RTVX

13. ADCB : KNML :: EHGF :
    (A) DGFE  (B) RUST  (C) QRST  (D) ZYXW

14. BCDF : GHIK :: LMNP :
    (A) QRST  (B) QRTS  (C) QRSU  (D) QRSV

15. IC : 6 :: DP :
    (A) 14  (B) 10  (C) 12  (D) 16

16. ABCD : WXYZ :: EFGH :
    (A) STUV  (B) ZYWX  (C) VUTS  (D) WXZY

17. 83 : 25 :: 29 :
    (A) 44  (B) 49  (C) 40  (D) 63

Directions: In question nos. 18 to 22, find the odd number/letters/figures/number pair from the given alternatives.

18. (A) Ladder  (B) Staircase  (C) Bridge  (D) Escalator

19. (A) Talking  (B) Walking  (C) Sleeping  (D) Running

20. (A) DWHS  (B) BYDW  (C) CWFS  (D) EVJQ

21. (A) DHLP  (B) TXBF  (C) JNRV  (D) YBEH

22. (A) 1  (B) 65  (C) 8  (D) 64

23. Find the number that does not belong to the group of number for lack of common property.
    (A) 945  (B) 625  (C) 743  (D) 853

24. Find out the set of numbers amongst the four sets of numbers given in the alternatives which is not like the set given in the question.
    Given set: (8, 56, 72)
    (A) (7, 56, 63)  (B) (3, 15, 24)  (C) (6, 42, 54)  (D) (5, 30, 35)

25. In the following question, number of letters are skipped in between by a particular rule. Which of the following series observes the rule?
    (A) AEJOTY  (B) AFKPUZ  (C) AFKETY  (D) AEINRV
26. Insert the correct missing number from the choices given below:

<table>
<thead>
<tr>
<th>2 cm</th>
<th>7 cm</th>
<th>9 cm</th>
<th>18 cm</th>
<th>36 cm</th>
<th>72 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>157</td>
<td>150</td>
<td>141</td>
<td>123</td>
<td>87</td>
<td>?</td>
</tr>
</tbody>
</table>

(A) 36  
(B) 15  
(C) 51  
(D) 69

**Directions:** Arrange the following words as per order in the dictionary.

27. 1. Noble 
2. Nobility 
3. Noblesse 
4. Nobility 
5. Nobble 

(A) 1, 4, 3, 2, 5  
(B) 3, 4, 1, 2, 5  
(C) 5, 2, 4, 1, 3  
(D) 2, 4, 3, 5, 1

28. Which one of set of letters when sequentially placed at the gaps in the given letter series shall complete it?

an _ _ ana _ na _ nan _ a

(A) Annan  
(B) Aanan  
(C) Nanna  
(D) Naana

**Directions:** In question nos. 29 to 33, a series is given with one/two term missing. Choose the correct alternative from the given ones that will complete the series.

29. MNOABCPQRDEFSST ?

(A) GK  
(B) UV  
(C) GH  
(D) UG

30. 5 9 ? = 84

(A) 6  
(B) 7  
(C) 5  
(D) 6

31. 9, 8, 10, 16, 11, ? 12, 64

(A) 28  
(B) 36  
(C) 25  
(D) 32

32. 34, 18, 10, ?

(A) 8  
(B) 5  
(C) 7  
(D) 6

33. Find the wrong number in the series.

7, 28, 63, 124, 215, 342

(A) 28  
(B) 63  
(C) 124  
(D) 342

34. In a class Rajan got the 11th rank and he was 31st from the bottom of the list of boys passed. Three boys did not take the examination and one failed. What is the total strength of the class?

(A) 32  
(B) 42  
(C) 45  
(D) 46

35. In a family, mother’s age is twice that of daughter’s age. Father is 10 years older than mother. Brother is 20 years younger than his mother and 5 years older than his sister. What is the age of the father?

(A) 62 years  
(B) 60 years  
(C) 58 years  
(D) 55 years

36. Rahul and Robin are brothers. Pramod is Robin’s father. Sheela is Pramod’s sister. Prema is Pramod’s niece. Shubha is Sheela’s granddaughter. How is Rahul related to Shubha?

(A) Brother  
(B) Cousin  
(C) Uncle  
(D) Nephew

37. In a survey of a town, it was found that 65% of the people surveyed watch the news on T.V., 40% read a newspaper and 25% read a newspaper and watch the news on T.V. What per cent of the people surveyed neither watch the news on T.V. nor read a newspaper?

(A) 5%  
(B) 10%  
(C) 20%  
(D) 15%

38. In the year 1996, the Republic Day was celebrated on Friday. On which day was the Independence Day celebrated in the year 2000?

(A) Tuesday  
(B) Monday  
(C) Friday  
(D) Saturday
39. Mr. and Mrs. Gopal have 3 daughters and each daughter has one brother. How many persons are there in the family?
(A) 5  (B) 6
(C) 7  (D) 8

40. In Ravi’s clock shop, two clocks were brought for repairs. One clock has the cuckoo coming out every sixteen minutes, while the other one has the cuckoo coming out every eighteen minutes. Both cuckoos come out at 12.00 noon. When will they both come out together again?
(A) 2.06 PM  (B) 2.08 PM
(C) 2.24 PM  (D) 2.32 PM

Directions: In question nos. 41 and 42, select the missing number from the given responses.

41. 169  64  81  30
    625  ?  49  50
    1296  576  100  70
(A) 324  (B) 289
(C) 441  (D) 361

42.  1  2  3
    4  5  6
    7  8  9
    27  28  ?
(A) 49  (B) 50
(C) 51  (D) 52

43. The number of road accidents in a city is increasing month by month as given below. Find out of the number of accidents in the month of June.

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan</th>
<th>Feb</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of accidents</td>
<td>4</td>
<td>8</td>
<td>16</td>
<td>28</td>
<td>44</td>
<td>?</td>
</tr>
</tbody>
</table>
(A) 64  (B) 48
(C) 52  (D) 40

44. If ‘×’ means ‘addition’, ‘–’ means ‘division’, ‘÷’ means ‘subtraction’ and ‘+’ means ‘multiplication’, then which of the following equations is correct?
(A) 16 + 5 – 10 × 4 ÷ 3 = 9
(B) 16 – 5 × 10 ÷ 4 + 3 = 12
(C) 16 + 5 ÷ 10 × 4 – 3 = 9
(D) 16 × 5 ÷ 10 ÷ 4 – 3 = 19

45. A man starts from a point, walks 8 km towards North, turns right and walks 12 km, turns left and walks 7 km, turns and walks 24 km towards South, turns right and walks 12 km. In which direction is he from the starting point?
(A) North  (B) South
(C) West   (D) East

46. Which diagram correctly represents the relationship between Human beings, Teachers, Graduates?

(A)  
(B)  
(C)  
(D)  

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47. How many triangles are there in the given figures?

Directions: From the given answer figures, select the one in which the question figures is hidden/ embedded.

48. Question figure.

Directions: In a mirror is placed on the line MN, the which of the answer figures is the right image of the given figure?

49. Question figure

Answer figures

Directions: A piece of paper is folded and cut as shown below in the question figures. From the given answer figures, indicate how it will appear when opened.

50. Question figures

Answer figures
PART —B

GENERAL AWARENESS

51. Lambert’s law is related to
   (A) Reflection  (B) Refraction
   (C) Interference  (D) Illumination

52. The coral reefs are the marine counterparts of
   (A) Temperate forest  (B) Tropical rain forests
   (C) Savannahs  (D) Scrubland

53. The Refrigerant ‘FREON’ is
   (A) Calcium Tetra Fluoride  (B) Difluoro Dichloro Methane
   (C) Fluorspar and Felspar  (D) Hydrofluosilicic acid

54. In the budget speech on February 28, 2011, the Finance Minister has announced that an international award with prize money of Rs. 1 crore is being instituted in the memory of Rabindranath Tagore for promoting
   (A) international peace  (B) emancipation of underprivileged
   (C) universal brotherhood  (D) human rights

55. The strong earthquake-cum-tsunami which has moved Japan’s main island Honshu by a few feet has also caused Earth’s axis to wobble by about
   (A) 1 inch  (B) 2 inch
   (C) 4 inch  (D) 6 inch

56. WILILEAKS, a whistleblowers website is an international organisation based in
   (A) U.S.A.  (B) U.K.
   (C) Sweden  (D) Norway

57. ‘Nomadic Elephant’ was the joint military exercise held some time back in India between India and
   (A) China  (B) U.S.A.
   (C) Russia  (D) Mongolia

58. The maximum limit on poll expenditure for parliamentary constituencies has been raised in February, 2011 to
   (A) 30 lacks  (B) 35 lacks
   (C) 40 lacks  (D) 50 lacks

59. Who received Sangeet Natak Akademi’s Ustad Bismillah Khan Yuva Puraskar for Dance in 2009?
   (A) Omkar Shrikant Dadarkar  (B) Ragini Chander Sarkar
   (C) Abanti Chakravotry and Sukracharya Rabha  (D) K. Nellai Manikandan

60. Which of the following folk dances is associated with Jammu and Kashmir?
   (A) Jhora  (B) Veedhi
   (C) Rauf  (D) Suisini

61. Which of the following books has been written by Kamala Das?
   (A) Witness the Night  (B) The Red Devil
   (C) Earth and Ashes  (D) Tonight This Savage Rite

62. Who invented the Jet Engine?
   (A) Karl Benz  (B) Sir Frank Whittle
   (C) Thomas Savery  (D) Michael Faraday

63. South-South dialogue is associated with
   (A) Co-operation among developing nations  (B) Arms conference
   (C) Summit meeting between developed and developing countries  (D) All the above

64. The reserve held by Commercial Banks over and above the statutory minimum, with the RBI are called
   (A) Cast reserves  (B) Deposit reserves
   (C) Excess reserves  (D) Momentary reserves
65. Who is authorized to issue coins in India?
   (A) Reserve Bank of India  
   (B) Ministry of Finance  
   (C) State Bank of India  
   (D) Indian Overseas Bank

66. Which four countries are called the Asian Tigers?
   (A) Hong Kong, Singapore, South Korea, Taiwan  
   (B) Hong Kong, China, Singapore, Taiwan  
   (C) Hong Kong, Malaysia, Singapore, China  
   (D) Hong Kong, South Korea, China, Taiwan

67. In the Budget Estimates for 2011-12, an allocation of Rs. 300 crore has been made for promoting output of pulses in 60,000 villages in rainfed areas with a view to attaining self-sufficiency in pulse in a period of
   (A) two years  
   (B) three years  
   (C) four years  
   (D) five years

68. In the budget for 2011-12 presented by the Finance Minister on 28-2-2011, the growth rate for the year 2010-11 was projected at
   (A) 7.6%  
   (B) 8.0%  
   (C) 8.6%  
   (D) 9.0%

69. The ‘break-even’ points where
   (A) marginal revenue equals marginal cost  
   (B) average revenue equals average cost  
   (C) total revenue equals total cost  
   (D) none of the above

70. The method of Impeachment of the President of India is adopted from
   (A) U.S.A.  
   (B) U.K.  
   (C) U.S.S.R.  
   (D) France

71. In the English Schedule of the Constitution of India, which languages were added subsequently?
   (A) English, Sindhi, Marathi, Sanskrit  
   (B) Sanskrit, Sindhi, Konkani, Manipuri  
   (C) Sindhi, Konkani, Manipuri, Nepali  
   (D) Marathi, Oriya, Konkani, Nepali

72. Indian Parliament Means
   (A) Rajya Sabha – Lok Sabha  
   (B) Rajya Sabha – Lok Sabha – Prime Minister  
   (C) President of India – Rajya Sabha – Lok Sabha  
   (D) President of India – Vise President of India – Lok Sabha – Rajya Sabha

73. Generally the soil of the northern plains of India has been formed by
   (A) degradation  
   (B) aggradation  
   (C) weathering in situ  
   (D) erosion

74. Huien Tsang visited India during the reign of
   (A) Chandragupta I  
   (B) Chandragupta II  
   (C) Harshavardhana  
   (D) Rudradaman

75. The Muslim adventurer who destroyed the Nalanda University was
   (A) Alla-ud-din Khilji  
   (B) Muhammad-bin-Tughlak  
   (C) Muhammad-bin-Bhaktiyar  
   (D) Muhammad-bin-Quasim

76. Painting reached its highest level of development during the reign of
   (A) Akbar  
   (B) Aurangzeb  
   (C) Jahangir  
   (D) Shah Jahan

77. The communal electorate was introduced for the first time in India in
   (A) 1919  
   (B) 1935  
   (C) 1906  
   (D) 1909

78. The two states which had non-Congress Ministries in 1937 were
   (A) Bengal and Punjab  
   (B) Punjab and NWEP  
   (C) Madras and Central Provinces  
   (D) Bihar and Uttar Pradesh

79. Sea breeze is formed during
   (A) Day time  
   (B) Night time  
   (C) Both  
   (D) Seasonal
80. What percentage of word's freshwater is stored as glacial ice?
   (A) 50%  (B) 10%  (C) 70%  (D) 30%
81. Which one of the following rivers of India does not make a delta?
   (A) Ganges  (B) Godavari  (C) Mahanandi  (D) Tapti
82. Which one of the following states has the longest coastline?
   (A) Maharashtra  (B) Tamil Nadu  (C) Gujarat  (D) Andhra Pradesh
83. The pass located in Himachal Pradesh is
   (A) Shipkila  (B) Zojila  (C) Nathula  (D) Jelepla
84. Match the following and select the correct answer from the codes given below:

<table>
<thead>
<tr>
<th>Crops</th>
<th>Producing state</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Tea</td>
<td>(1) Himachal Pradesh</td>
</tr>
<tr>
<td>b) Sugarcane</td>
<td>(2) Assam</td>
</tr>
<tr>
<td>c) Groundnut</td>
<td>(3) Uttar Pradesh</td>
</tr>
<tr>
<td>d) Apple</td>
<td>(4) Gujarat</td>
</tr>
</tbody>
</table>

   (A) a-2, b-4, c-1, d-3  
   (B) a-2, b-3, c-4, d-1  
   (C) a-3, b-2, c-1, d-4  
   (D) a-4, b-3, c-1, d-2
85. An example of false fruit is
   (A) Apple  (B) Guava  (C) Mango  (D) Tomato
86. Normal fasting blood sugar level per 100 ml. of blood in man is
   (A) 30 – 50 mg  (B) 50 – 70 mg  (C) 80 – 100 mg  (D) 120 – 140 mg
87. Rate of interest is determined by
   (A) The rate of return of the capital invested  
   (B) Central Government  
   (C) Liquidity preference  
   (D) Commercial Banks
88. The vector of disease sleeping sickness is
   (A) sand-fly  (B) house-fly  (C) fruit-fly  (D) tse-tse fly
89. For how many years have the dinosaurs been extinct?
   (A) About 25 million years  
   (B) About 65 million years  
   (C) About 100 million years  
   (D) About 135 million years
90. A geostationary satellite revolves round the earth from
   (A) East to West  
   (B) West to East  
   (C) North to South  
   (D) South to North
91. Among the following materials sound travels fastest in
   (A) Steel  (B) Air  (C) Vacuum  (D) Water
92. The rear side of the moon was photographed by
   (A) Viking I  
   (B) Viking II  
   (C) Luna III  
   (D) Mariner IX
93. Which phenomenon do bats or dolphins use to find prey, predators or obstacles?
   (A) Refraction of sound  
   (B) Formation of beats  
   (C) Scattering of sound  
   (D) Echo location
94. What did the first electronic digital computer contain?
   (A) Transistors  
   (B) Valves  
   (C) Core memory  
   (D) Semiconductor memory
95. Microsoft Office’s personal information manager is
   (A) Outlook  
   (B) Internet Explorer  
   (C) Organizer  
   (D) Access
96. Hard steel contains
   (A) 2 to 5 per cent carbon  
   (B) 0.5 to 1.5 per cent carbon  
   (C) 0.1 to 0.4 per cent carbon  
   (D) 0.01 to 0.04 per cent carbon
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<tr>
<td>97. Cement is formed by strongly heating a mixture of</td>
<td>(C) supercooled gas (D) superheated liquid</td>
</tr>
<tr>
<td>(A) limestone and graphite</td>
<td></td>
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<tr>
<td>(B) limestone and clay</td>
<td></td>
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<td>(C) chalk and graphite</td>
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<td>(D) clay and graphite</td>
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<tr>
<td>98. Glass is a</td>
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<td>(A) superheated solid</td>
<td></td>
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<tr>
<td>(B) superheated liquid</td>
<td></td>
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<tr>
<td>99. The temperature of oxy-acetylene flame is around</td>
<td></td>
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<tr>
<td>(A) 2800°C</td>
<td>(B) 3200°C</td>
</tr>
<tr>
<td>(C) 4000°C</td>
<td>(D) 1500°C</td>
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<td>100. Which is the most stable eco-system?</td>
<td></td>
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<tr>
<td>(A) Desert</td>
<td>(B) Ocean</td>
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<tr>
<td>(C) Mountain</td>
<td>(D) Forest</td>
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</tbody>
</table>
101. A reduction of 20% in the price of an apple enables a man to buy 10 apples more for Rs. 54. The reduced price of apple per dozen is
   (A) Rs. 4.32   (B) Rs. 12.96
   (C) Rs. 10.80 (D) Rs. 14.40

102. Price of a commodity has increased by 60%. By what per cent must a consumer reduce the consumption of the commodity so as not to increase the expenditure?
   (A) 37   (B) 37.5
   (C) 40.5 (D) 60

103. The cost of an apple is twice that of a banana and the cost of a banana is 25% less than that of a guava. If the cost of each type of fruit increase by 10%, then the percentage increase in cost of 4 bananas, 2 apples and 3 guavas is
   (A) 10%   (B) 12%
   (C) 16%   (D) 18%

104. Walking \( \frac{6}{7} \)th of his usual speed, a man is 12 minutes too late. The usual time taken by him to cover that distance is
   (A) 1 hour   (B) 1 hour 12 minutes
   (C) 1 hour 15 minutes (D) 1 hour 20 minutes

105. If I walk at 5 km/hour, I miss a train by 7 minutes. If, however, I walk at 6 km/hour, I reach the station 5 minutes before the departure of the train. The distance (in km) between my house and the station is
   (A) 6   (B) 5
   (C) 4   (D) 3

106. Rs. 800 becomes Rs. 956 in 3 years at a certain rate of simple interest. If the rate of interest is increased by 4%, what amount will Rs. 800 become in 3 years?
   (A) \( \frac{40}{11} \)   (B) \( \frac{43}{11} \)
   (C) \( \frac{46}{11} \)   (D) \( \frac{41}{11} \)

107. Simple interest on a certain sum is \( \frac{16}{25} \) of the sum. The rate per cent if the rate per cent and time (in years) are equal, is
   (A) 6%   (B) 8%
   (C) 10%   (D) 12%

108. If the difference between S.I. and C.I. for 2 years on a sum of money lent at 5% is Rs. 6, then the sum is
   (A) Rs. 2200   (B) Rs. 2400
   (C) Rs. 2600   (D) Rs. 2000

109. A hemisphere and a cone have equal bases. If their heights are also equal, the ratio of their curved surface will be
   (A) \( 1 : \sqrt{2} \)   (B) \( 2:1 \)
   (C) 1 : 2   (D) 2 : 1

110. If \( x = \frac{\sqrt{5}+1}{\sqrt{5}-1} \), then, the value of \( 5x^2 - 5x - 1 \) is
   (A) 0   (B) 3
   (C) 4   (D) 5

111. When 2\(^{23} \) is divided by 10, the remainder will be
   (A) 2   (B) 3
   (C) 4   (D) 8

112. The value of \( \frac{3}{3+\frac{1}{3}} \) is
   (A) \( \frac{40}{11} \)   (B) \( \frac{43}{11} \)
   (C) \( \frac{46}{11} \)   (D) \( \frac{41}{11} \)
113. Find the unit digit in the product \((4387)^{245} \times (621)^{72}\) 
(A) 1 (B) 2 (C) 5 (D) 7

114. If \(\sqrt{2} = 1.4142\) find the value of 
\[2\sqrt{2} + \sqrt{2} + \frac{1}{2\sqrt{2}} + \frac{1}{\sqrt{2}:2}\] 
(A) 1.4144 (B) 2.8284 (C) 28.284 (D) 2.4142

115. If \(X \times Y = Y^2 + Y^2 - XY\) then 11 \(\times\) 13 is 
(A) 117 (B) 147 (C) 290 (D) 433

116. The value of \(\frac{(3.2)^3 - 0.008}{(3.2)^2 + 0.64 + 0.04}\) is 
(A) 0 (B) 2.994 (C) 3.208 (D) 3

117. If \(\frac{1}{a} = 11\), then the value of \(a^2 - 33ab\) is 
(A) 1331331 (B) 1331000 (C) 1334331 (D) 1330030

118. If \(\sqrt{a + \frac{x}{961}} = \frac{32}{31}\), then the value of \(x\) is 
(A) 63 (B) 61 (C) 65 (D) 64

119. If \(a\) and \(b\) are odd numbers, then which of the following is even? 
(A) \(a + b + ab\) (B) \(a + b - 1\) (C) \(a + b + 1\) (D) \(a + b + 2ab\)

120. \(2^{16} - 1\) is divisible by 
(A) 11 (B) 13 (C) 17 (D) 19

121. The HCF and LCM of two numbers are 12 and 924 respectively. Then the number of such pairs is 
(A) 0 (B) 1 (C) 2 (D) 3

122. What is the least number which, when divided by 4, 6, 7, 8 gives the remainder 3 but is divisible by 9? 
(A) 1463 (B) 1573 (C) 1683 (D) 1793

123. Three numbers are in the ratio 3 : 4 : 5. The sum of the largest and the smallest equals the sum of the second and 52. The smallest number is 
(A) 20 (B) 27 (C) 39 (D) 52

124. If the radius of a circle is increased by 50%, its area is increased by 
(A) 125% (B) 100% (C) 75% (D) 50%

125. A and B working separately can do a piece of work in 9 and 12 days respectively. If the work for a day alternately with a beginning, the work would be completed in 
(A) \(1 \frac{2}{3}\) days (B) \(1 \frac{1}{2}\) days (C) \(1 \frac{1}{4}\) days (D) \(1 \frac{1}{3}\) days

126. A and B together can do a work in 10 days. B and C together can do the same work in 6 days. A and C together can do the work in 12 days. Then A, B and C together can do the work in 
(A) 28 days (B) 14 days (C) \(5 \frac{5}{7}\) days (D) \(8 \frac{2}{7}\) days

127. A does half as much work as B in three-fourth of the time. If together they take 18 days to complete a work, how much time shall B take to do it alone? 
(A) 30 days (B) 35 days (C) 40 days (D) 45 days

128. If a wire is bent into the shape of a square, then the area of the square so formed is 81cm². When the wire is rebent into a
semicircular shape, then the area (in cm$^2$) of the semicircle will be (Take $\pi = \frac{2}{7}$)

(A) 22  (B) 44  (C) 77  (D) 154

129. Marbles a diameter 1.4 cm are dropped into a cylindrical beaker containing some water and are fully submerged. The diameter of the beaker is 7 cm. Find how many marbles have been dropped in it if the water rises by 5.6 cm.

(A) 50  (B) 150  (C) 250  (D) 350

130. Water is flowing at the rate of 3km/hr through a circular pipe of 20 cm internal diameter into a circular cistern of diameter 10m and depth 2 m. In how much time will the cistern be filled?

(A) 1 hr  (B) 1 hr 40 mins  (C) 1 hr 20 mins  (D) 2 hr 40 mins

131. A bicycle wheel makes 5000 revolution in moving 11 km. The diameter of the wheel, in cm, is

(A) 35  (B) 55  (C) 65  (D) 70

132. At each corner of a triangular field of sides 26 m, 28 m and 30 m, a cow is tethered by a rope of length 7 m. The area (in m$^2$) unglazed by the cows is

(A) 336  (B) 259  (C) 154  (D) 77

133. A shopkeeper allows 23% commission on his advertised price and still makes a profit of 10%. If he gains Rs. 56 on one item, his advertised price of the item, in Rs. is

(A) 820  (B) 780  (C) 790  (D) 800

134. The single discount equal to three consecutive discounts of 10%, 12% and 5% is

(A) 26.27%  (B) 24.76%  (C) 9%  (D) 11%

135. If $x : y = 5 : 6$, then $(3x^2 - 2y^2) : (y^2 - x^2)$ is

(A) 7 : 6  (B) 11 : 3  (C) 3 : 11  (D) 6 : 7

136. An alloy contains copper, zinc and nickel in the ratio of 5 : 3 : 2. The quantity of nickel in kg that must be added to 100 kg of this alloy to have the new ratio 5 : 2 : 3, is

(A) 8  (B) 10  (C) 12  (D) 15

137. The ratio of the ages of Ram and Rahim 10 years ago was 1 : 3. The ratio of the their ages five years hence will be 2 : 3. Then the ratio of the their present ages is

(A) 1 : 2  (B) 3 : 5  (C) 3 : 4  (D) 2 : 5

138. The incomes of A, B and C are in the ratio 7: 9 : 12 and their spending are in the ratio 8 : 9 : 15. If A saves $\frac{1}{4}$th of his income, then the saving of A, B and C are in the ratio of

(A) 69 : 56 : 48  (B) 47 : 74 : 99  (C) 37 : 72 : 49  (D) 56 : 99 : 69

139. Out of 4 numbers, whose average is 60, the first one is one-fourth of the sum of the last three. The first number is

(A) 15  (B) 45  (C) 48  (D) 60

140. The average of 25 observations is 13. It was later found that an observation 73 was wrongly entered as 48. The new average is

(A) 12.6  (B) 14  (C) 15  (D) 13.8
141. If the cost price of 10 articles is equal to the selling price of 8 articles, then gain per cent is
(A) 10%  (B) 8%
(C) 50%  (D) 25%

142. An article is marked 40% above the cost price and discount of 30% is allowed. What is the gain or loss percentage?
(A) 10% gain
(B) 5% gain
(C) 2% loss
(D) 12% loss

143. A man bought oranges at the rate of 8 for Rs. 34 and sold them at the rate of 12 for Rs. 57. How many oranges should be sold to earn a net profit of Rs. 45?
(A) 90  (B) 100
(C) 135  (D) 150

144. A man sells two articles for Rs. 5000 each neither losing nor gaining in the deal. If he sold of them at a gain of 25%, the other article is sold at a loss of
(A) $15\frac{2}{3}$%  (B) $16\frac{2}{3}$%
(C) $17\frac{1}{3}$%  (D) $18\frac{1}{3}$%

145. By selling an article for Rs. 144, a person gained such that the percentage gain equals the cost price of the article. The cost price of the article is
(A) Rs. 90  (B) Rs. 80
(C) Rs. 75  (D) Rs. 60

146. The average age of 11 players of a cricket team is increased by 2 months when two of them aged 18 years and 20 years are replaced by two new players. The average age of the new players is
(A) 19 years 1 month
(B) 19 years 6 month
(C) 19 years 11 month
(D) 19 years 5 month

147. What is the different between the production of company Z in 2004 and company Y in 2000 (in thousand tonnes)?
(A) 2000  (B) 200
(C) 20  (D) 100

148. What is the ratio of the average production of Company X in the period 2002-2004 to the average production of company Y in the same period?
(A) 1 : 1  (B) 15 : 17
(C) 23 : 25  (D) 27 : 29

149. What is the percentage increase in the production of company Y from 2002 to 2003?
(A) $14\frac{2}{7}$%  (B) $16\frac{6}{7}$%
(C) 25  (D) 40

150. The average production for five years was maximum for which company?
(A) X and Z both  (B) Y
(C) Z  (D) X and Y both
PART D

ENGLISH COMPREHENSION

Directions: In questions nos. 151 to 155, out of the four alternatives, choose the one which best expresses the meaning of the given word and mark it in the Answer Sheet.

151. Poignant
   (A) showy  (B) sad
   (C) silly   (D) snobbish

152. Querulous
   (A) critical (B) curious
   (C) complaining (D) ambiguous

153. Audacious
   (A) brilliant (B) powerful
   (C) bold     (D) frightening

154. Perilous
   (A) hazardous (B) rigorous
   (C) resilient (D) requisite

155. Reverie
   (A) determination (B) rigorous
   (C) reality     (D) requisite

Directions: In questions nos. 156 to 160, choose the word opposite in meaning to the given word and mark it in the Answer Sheet.

156. Autonomous
   (A) self-government
   (B) dependent
   (C) defensive
   (D) neutral

157. Deceitful
   (A) sincere
   (B) useful
   (C) plain
   (D) honest

158. Exonerate
   (A) admit
   (B) release
   (C) convict
   (D) reject

159. Exaggerate
   (A) underwrite
   (B) understate
   (C) ignore
   (D) condemn

Directions: In questions nos. 161 to 165, four alternatives are given for the Idiom/Phrase and bold italicized in the sentence. Choose the alternative which best expresses the meaning of the Idiom/Phrase and mark it in the Answer Sheet.

160. Controversial
   (A) indisputable
   (B) restrained
   (C) controlled
   (D) appeasing

Directions: In questions nos. 161 to 165, a sentence is given which may need improvement. Alternatives are given at (A), (B) and (C) below which may be a better option. In case no improvement is needed, your answer is (D).
Blacken the appropriate rectangle [square] in the Answer Sheet.

166. A taller Sikh rushed forward than any of his comrades.
(A) A Sikh, taller than any of his comrades, rushed forward
(B) A Sikh rushed forward taller than any of his comrades
(C) A Sikh rushed forward than any of his comrades taller
(D) No improvement

167. An author is the reign of Question Anne who was famous lived in a cottage.
(A) An author in the reign, who was famous, of Queen Anne lived in a cottage
(B) In the reign of Queen Anne, an author lived in a cottage, who was famous
(C) An author who was famous in the reign of Queen Anne lived in a cottage
(D) No improvement

168. In the absence of your support, he would have lost the election.
(A) Lacking your support, he would have lost the election
(B) But for your support, he would have lost the election
(C) He would have lost the election, if you had not support him
(D) No improvement

169. My uncle is enough rich to buy a car.
(A) My uncle is rich enough to buy a car
(B) My uncle is richer enough to buy a car
(C) My uncle is enough richer to buy a car
(D) No improvement

170. Walking along the road, an old man ran over the lorry.
(A) Walking along the road, an old man ran behind the lorry
(B) Running along the road, the lorry ran over an old man
(C) The lorry ran over an old man walking along the road
(D) No improvement

Directions: In questions nos. 171 to 175, groups of four words are given. In each group, one word is correctly spelt. Find the correctly spelt word and mark your answer in the Answer Sheet.

171. (A) persistence (B) thesaurus
(C) conspicuous (D) renaissance

172. (A) acoustic (B) norcoctic
(C) pesimist (D) permenant

173. (A) impetous (B) ignoable
(C) ignominious (D) idiosyncrasy

174. (A) Inconsistant (B) Repentant
(C) Exponant (D) Excultent

175. (A) demagogue (B) deliverance
(C) delinquency (D) deliberative

Directions: In question nos. 176 to 180, out of the four alternatives, choose the one which can be substituted for the given words/sentence and indicate it by blackening the appropriate rectangle [square] in the answer Sheet.

176. A person who has no money to pay off his debts
(A) Insolvent (B) Poor
(C) Destitute (D) Pauper

177. Words uttered impiously about God
(A) amoral (B) philosophy
(C) logic (D) blasphemy

178. Quibble
(A) Premeditate (B) Prenominate
(C) Prevaricate (D) Preponderate

179. One who compiles a dictionary
(A) geographer (B) lexicographer
(C) lapidist (D) linguist

180. A test in which cells from diseased organs are removed and tested
(A) Biopsy (B) Autopsy
(C) Operation (D) Amputation

Directions: In the following passage (181 to 190), some of the words have been left out. First read
the passage over and try to understand what it is about. Then fill in the blanks with the help of the alternatives given. Mark your answer in the Answer Sheet.

**PASSAGE**
(Question Nos. 181 to 190)

A __181__ becomes a flowing stream only __182__ there is continuity of __183__ life in a society. In __184__ words, a __185__ culture comes into __186__ when people __187__ a continuous way of life. Such __188__ expresses itself __189__ various ways in common tradition and __190__ of conduct.

181. (A) civilization  (B) culture  (C) idea  (D) philosophy
182. (A) at  (B) what  (C) when  (D) as
183. (A) individual  (B) nature’s  (C) society’s  (D) collective
184. (A) different  (B) difficult  (C) other  (D) many
185. (A) distinctive  (B) unique  (C) clean  (D) foggy
186. (A) phase  (B) existence  (C) action  (D) thinking
187. (A) develop  (B) create  (C) follow  (D) end
188. (A) inconsistency  (B) uniqueness  (C) greatness  (D) continuity
189. (A) in  (B) of  (C) with  (D) at
190. (A) rules  (B) regulations  (C) norms  (D) laws

**Directions (196-200):** In the following questions, sentences are given with blanks to be filled in with an appropriate word. Four alternatives are suggested for each question. Choose the correct alternative out of the four.

196. _____ your instructions, we have closed your bank account.
   (a) In lieu of  (b) With regard to  (c) In accordance with  (d) On account of

197. _____ she is clever, she often makes mistakes.
   (a) Despite  (b) Since  (c) Although  (d) Yet

198. Do you prefer _____ or traditional art forms?
   (a) archaic  (b) contemporary  (c) foreign  (d) simultaneous

199. The farmers _____ their farms, if they had known that a thunderstorm was approaching.
   (a) will leave  (b) would leave  (c) will have left  (d) would have left

200. The Paralympics is a competition for the _____
    (a) disadvantaged  (b) discouraged  (c) disabled  (d) despised
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