HSC Maharashtra Board question paper - March 2013

Note:
i. Answers to Section-I and Section-II should be written in Two Separate answer books.
ii. Questions from Section-I attempted in the answer book of Section-II and vice-versa will not be assessed / not given any credit.
iii. All questions are compulsory.
iv. Draw neat and labelled diagram wherever necessary.
v. Figures to the right indicate full marks.
vi. Answer to every new question must begin on a new page.

ZOOLOGY: SECTION – II

Q.1. Select and write the most appropriate answer from the given alternatives for each sub-question: [7]

i. What will be the parent’s blood groups if the blood group of a child is AB?
   (A) A and O  (B) B and O  (C) AB and O  (D) A and AB

ii. The good milk producer Indian buffaloes are ______.
    (A) Nagpuri, Murrah and Surati  (B) Mehsana, Gir and Sindhi  (C) Jersy, Holstein and Nili  (D) Murrah, Sahiwal and Brown Swiss

iii. Chancre are the primary lesions caused by-
     (A) Neisseria gonorrhoeae  (B) Treponema pallidum  (C) Plasmodium vivax  (D) Salmonella typhi

iv. The scientific key to understand biology and behavior of human is ______.
    (A) Blue print  (B) Genome  (C) Genetic linkage  (D) DNA probe

v. Damage to which endocrine gland may result in water and electrolyte imbalance?
   (A) Thymus gland  (B) Thyroid gland  (C) Adrenal gland  (D) Parathyroid gland

vi. In which device a fine spray of water is used for separation of ammonia and sulphur dioxide?
    (A) Scrubber  (B) Diesel engine  (C) Smokers  (D) Electrostatic precipitator

vii. Which is the correct order in which the proteins participate in clotting of blood?
     (A) Prothrombinase → Prothrombin → Thromboplastin → Thrombin  
     (B) Thromboplastin → Prothrombinase → Prothrombin → Thrombin  
     (C) Prothrombin → Thromboplastin → Thrombin → Prothrombinase  
     (D) Thrombin → Prothrombin → Thromboplastin → Prothrombinase
Q.2. (A) Answer in One sentence each:
   i. Define commensalism.
   ii. Give the name of process involved in DNA fragmentation.
   iii. Name the term for the transmission of HIV from pregnant mother to foetus.
   iv. What are the major sources of air pollution?
   v. Name the hormone purified from dog’s pancreas by Banting and Best.
   vi. What is the major achievement of animal breeding?
   vii. What is space wave propagation? State its three components.

   (B) Sketch and label seminiferous tubule as seen in the T.S. of testis.

   (C) Attempt Any TWO of the following:
   i. Define the term ‘natality’. How natality is calculated?
   ii. Enlist the steps involved in solving disputed parentage by DNA profiling.
   iii. Arrange the following stages of the human evolution in the order of their increasing cranial capacity.
      (a) Neanderthal man
      (b) Cro-Magnon man
      (c) Homo erectus
      (d) Homo habilis
   iv. Enlist the number and names of motor cranial nerves in human being.

Q.3. (A) Attempt Any TWO of the following:
   i. Give the adverse effects of opioids, cannabinoids, and morphines on human health.
   ii. Describe hypertension. Add a note on angina pectoris.
   iii. Explain the mechanical methods of birth control.

   (B) Sketch and label phases in oogenesis


   OR

   What is sex linkage? Explain the inheritance of colour blindness and haemophilia with suitable charts.