

BIOLOGY (Fresh) - II

Total Time: 3 Hours

Max: Marks: 85

Note: There are THREE Sections of this Paper i.e. A, B and C. attempt each according to the given instructions.

Time: 20 Minutes

SECTION-A

Marks: 18

Note: Attempt all parts of Section - A. Section -A must be return to the superintendent after 20 minutes even if you have not attempted any question. Overwriting/ defacing/Cutting etc is prohibited in Section-A and no credit will be given to such answer.

I. Write the correct option i.e. A/B/C/D in the empty boxes.

- i. The number of facial bone in human are _____
(A) 14 (B) 28 (C) 8 (D) 12 A
- ii. _____ refers to pain, weakness, numbness or Tingling in the leg.
(A) Spondylosis (B) Sciatica (C) Arthritis (D) None of them. B
- iii. What does not happen during inspiration in man _____
(A) Ribs move forward (B) Diaphragm becomes dome-shaped B
(C) Ribs are elevated (D) Intercostals muscles contract
- iv. The most important hormone in initiating and maintaining lactation after birth is _____
(A) Oxytocin (B) Prolactin (C) FSH (D) Estrogen B
- v. The most toxic metabolites in the blood is the origin of which type molecule _____
(A) Fats (B) Carbohydrate (C) Protein (D) Nucleic acid C
- vi. Hypercalcemia is mainly caused due to over secretion of _____
(A) Adrenaline (B) Nor-Adrenaline (C) Glucagon (D) Parathormone D
- vii. The disorder in which bones are porous and thin but normal composition is _____
(A) Osteomalocia (B) Osteoporosis (C) Rickets (D) Arthritis B
- viii. Resting membrane potential of neuron is _____
(A) -90 mv (B) -60 mv (C) -70 mv (D) -80 mv C
- ix. Kidney receive _____ % of blood coming from heart.
(A) 20 (B) 30 (C) 40 (D) 25 A
- x. _____ receptor receive the stimulus of pain.
(A) Nociceptor (B) Thermoreceptor (C) Mechanoreceptor (D) Chemoreceptor A
- xi. _____ results in abnormal thickness of bones.
(A) Microcephaly (B) Acromegaly (C) Horre-lip (D) Arthritis. B
- xii. The measurement of human embryo (from head to buttocks) is known as _____
(A) Crown-Rump measurement (B) Rough measurement A
(C) Correct measurement (D) Approximate measurement
- xiii. The number of spinal nerves in human are _____
(A) 31 (B) 12 (C) 24 (D) 62 D
- xiv. Myoglobin has a special function in muscle _____
(A) It breaks down glycogen (B) It holds a reserve supply of oxygen in the muscle B
(C) It is contractile protein (D) None of these
- xv. HBV vaccines are _____ vaccines.
(A) Live (B) Killed (C) Subunit (D) Toxoid C
- xvi. Culturing of the cells for their re-aggregation to form a tissue-like structure represent _____ culture.
(A) Organ (B) Histotypic (C) Organotypic (D) cell B
- xvii. The cause of stone cancer is _____
(A) Global warming (B) Acid rain (C) Ozone layer (D) Green house B
- xviii. Permanent removal of standing forest is _____
(A) Forestation (B) Deforestation (C) Reforestation (D) All of these B

BIOLOGY (Fresh) - II

Note: Time allowed for section B and C is 2 hours and 40 minutes.

SECTION "B"

Marks: 40

II. Attempt any TEN Parts out of the following. Each Part carries equal marks.

- i. Differentiate between Osmoconformers and Osmoregulators?
- ii. Differentiate between Osteoblasts and Osteocytes?
- iii. What are the causes of Kidney stones?
- iv. What is biological clock?
- v. Describe the structure of a typical neuron?
- vi. What is the Endosymbiosis view of Eukaryotic origin?
- vii. Briefly describe Hyperthyroidism and Hypothyroidism?
- viii. Briefly describe placentation in human.
- ix. Describe the causes and risk factors of pneumonia?
- x. Differentiate between sympatric and allopatric speciation?
- xi. What are the five major causes of evolution accepted by the Modern theory?
- xii. Write down the steps of Nitrification?
- xiii. What are restriction endonucleases?

SECTION "C"

Marks: 27

Note: Attempt any THREE questions of the following. Each question carries equal Marks.

- III. Elaborate Meselson and Stahl to justify the semi-conservative replication as a correct model of replication.
- IV. Give a detailed account of development of human embryo.
- V. What is sex-linkage? Give a detailed account on sex-linkage in Drosophila?
- VI. Write a note on any two of the following.
 - (a) Mendel's law of segregation
 - (b) Formation of Recombinant DNA
 - (c) Gene therapy