

ACADEMIC SESSION: 2017-2018
PART – I

PAPER - 1, UNIT - I

GROUP A: NON CHORDATE

GROUP B: CHORDATE

1. Which of the following statements is true?
 - a. Invertebrates have tubular nerve cords.
 - b. Non-chordates have a vertebral column.
 - c. All chordates are vertebrates.
 - d. All vertebrates are chordates.
2. Which of the following is a diploblastic, radially symmetrical animal?
 - a. Hydra b. Earthworm c. Round worm d. Liver Fluke
3. In sponges, which cells maintain current of water?
4. Name a limbless amphibian.
5. Cold blooded animals are characterized by -----
6. Write down the important difference between chordates and non-chordates.
7. What does the Bauplane Concept refers to?
8. What are the components of a “Bauplane”?
9. What are the fundamental characteristics of animals belonging to phylum Chordata?
10. Match the following :

i. Operculum

ii. Parapodia

iii. Scales

iv. Comb plates

v. Radula

vi. Hairs

vii. Choanocytes

viii. Gill slits

a. Ctenophora

b. Mollusca

c. Porifera

d. Reptila

e. Annelida

f. Cyclostomate & chondrichthyes

g. Mammalia

h. Osteichthyes

PAPER - 1, UNIT - II

GROUP A1: PRINCIPLES OF MICROSCOPY

1. From which Greek word is the English word “Microscope” derived?
2. Photograph which is taken from microscope is known as-
 - a) Macrograph
 - b) Monograph
 - c) Micrograph
 - d) Pictograph
3. What is resolution? Write down the formula of resolution.
4. Mention the resolving power of human eye, Light Microscope and Electron Microscope.
5. Why the column of Electron Microscope does needs to be evacuated?
6. What are the main components of Transmission Electron Microscope?
7. What are the most important difference between Transmission Electron Microscope and Scanning Electron Microscope?
8. Which part of microscope is responsible for gathering diffuse rays from microscope light source and illuminating the specimen with a small cone of bright light:
 - a) condenser lens
 - b) objective lens
 - c) ocular lens
9. Why point source of electron is used in Electron Microscope?
10. What is the nature of lens in Electron Microscope?

PAPER - 1, UNIT - II
GROUP A2: CELL MEMBRANE

1. The cell membrane is the outermost part of animal cell & is situated underneath the cell wall in plant cells. What is the another name of cell membrane?
2. Which of these is true of the cell membrane in both animal & plant cells?
(a) Fully permeable (b) Partially permeable
3. It is determined that cell membrane consists of two layers. These are known as bilayer. What is the bilayer composed of?
4. The components of cell membrane have a head region & a tail. Which of them is hydrophobic & which one is hydrophilic?
5. What is the most established model of PM?
6. What is the role of cholesterol in PM?
7. What are the two main types of membrane proteins?
8. What is Freeze Fracture Technique?
9. What do you understand by membrane fluidity?
10. Elaborate membrane asymmetry

PAPER - 1, UNIT - II
GROUP A3: MITOCHONDRIA

1. What is the Greek word from which mitochondria is derived?
2. What is mitoplast?
3. Who discovered mitochondria?
4. Who coined the term mitochondria?
5. What is the primary role of mitochondria?
6. What is the total number of ATP generated from Aerobic Respiration?
7. How many ATP molecules are generated each from NADH and FADH₂ molecule?
8. What are the main phenomena associated with Aerobic Respiration?
9. Name one marker enzyme from each compartment of mitochondria?
10. What do you mean by mitochondrial biogenesis?

PAPER - 1, UNIT - II
GROUP B: GENETICS

1. What does DNA stands for?
2. How many strands make DNA helix?
3. What are the DNA bases that form the helix?
4. Which bases are purines? Which bases are pyrimidines?
5. The accepted hypothesis of DNA replication is
 - a. conservative theory
 - b. dispersive theory
 - c. semi-conservative Theory
6. Which is the largest among following?
 - a. Nucleotide
 - b. Nitrogenous base
 - c. Phosphate
 - d. Carbon
7. The 5' & 3' are related to the
 - a. Length of DNA strand
 - b. Carbon number in sugar
 - c. Number of phosphate
 - d. Base pair rule
8. DNA replication takes place in which direction?
9. State Chargaff's equivalence rule?
10. Explain re-naturation & de-naturation properties of DNA?

PAPER - 2, UNIT - I

GROUP A: DEVELOPMENTAL BIOLOGY

1. What are cryoprotectants? What are the different types of cryoprotectants?
Give examples of each type.
2. Discuss the process of cryopreservation.
3. Discuss the limitations of cryopreservation.
4. What is IVF? Discuss the various steps involved in IVF
5. What is GIFT, ZIFT and ICSI.