

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2019
(First Semester)

Branch -ZOOLOGY

CELL BIOLOGY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 x 1 = 10)

- 1 Cell theory was proposed by
(i) Schleiden & Schwann (ii) F.V Raspail
(iii) Robert Hooke (iv) Leeuwenhoek
- 2 The nuclear membrane disappears in the _____ of mitosis.
(i) prophase (ii) metaphase
(iii) anaphase (iv) telophase
- 3 Singer's fluid mosaic model of plasma membrane differs from the Robertson's model in
(i) the arrangement of lipid layers (ii) the arrangement of proteins
(iii) the absence of proteins (iv) the number of lipid layers
- 4 Which of the following is required for the assembly of an entire ribosome from its subunits?
(i) NAD⁺ (ii) Ca⁺⁺
(iii) Coenzymes (iv) Cytochrome - b
- 5 The main function of nucleolus in the cell is
(i) biogenesis of ribosomes (ii) synthesis of histones
(iii) synthesis of DNA (iv) all the above
- 6 Cytoplasmic vacuolar system refers to
(i) centrosome (ii) endoplasmic reticulum
(iii) mitochondria (iv) call vacuoles
- 7 A chromosome having centromere at its centre is
(i) submeta centric (ii) acentric
(iii) telocentric (iv) Metacentric
- 8 During protein synthesis an anticodon of tRNA pairs with
(i) rRNA nucleotide bases (ii) DNA nucleotide bases
(iii) mRNA nucleotide bases (iv) other tRNA nucleotide bases
- 9 Which of the following is a programmed cell death?
(i) Apoptosis (ii) Aging
(iii) Chemotherapy (iv) Radiation
- 10 Which of the following genes are responsible for the transformation of normal cells into tumour cells?
(i) Remedial genes (ii) oncogenes
(iii) Antisense genes (iv) Suppressor genes

SECTION - B (35 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks (5 x 7 = 35)

- 11 a Differentiate between prokaryotic and eukaryotic cells.
OR
b What is staining? Bring out the nuclear and cytoplasmic stains with suitable examples.
- 12 a Summarise the functions of Golgi bodies.
OR
b Explain the polymorphism in Lysosomes.
- 13 a Describe the functions of Endoplasmic reticulum.
OR
b Analyse the ultra structure and functions of Centrosome.
- 14 a Describe the structure and functions of tRNA.
OR
b Narrate the physico-chemical structure of DNA.
- 15 a Discuss the mechanism and significance of Apoptosis.
OR
b Bring out the characteristics of cancer cells.

SECTION - C (30 Marks)

Answer any **THREE** Questions

ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 Analyze the processes of first meiotic division.
- 17 Enumerate the functions of Plasma membrane.
- 18 Summarise the functions of Mitochondria.
- 19 Elucidate the special types of chromosomes with neat diagram.
- 20 Highlight the cellular functions of Oncoproteins.

Z-Z-Z

END