

2nd Semester Examination, 2022

Time : 3 hours

Full Marks : 60

Answer from all the Parts as per direction

The figures in the right-hand margin indicate marks

*Candidates are required to answer in their own words
as far as practicable*

Draw neat labelled diagrams wherever necessary

(CELL BIOLOGY)

PART – I

1. Answer the following :

1 × 8

(a) The cell junction between animal cells are called _____.

(b) Space enclosed by inner mitochondrial membrane is _____.

(Turn Over)

(2)

- (c) Cell was first seen under the microscope by _____
- (d) Infectious agents that consist of only naked RNA without any protective layer are called _____
- (e) Condensation of chromosome with visible centromere occurs during _____ Phase of cell cycle.
- (f) Lysosomes are absent in _____
- (g) Transportation across membrane based on concentration gradient is called _____
- (h) The cytoskeletal structure that helps in mitotic cell division is _____

PART - II

Answer any *eight* questions within *two to three* sentences each :

$$1\frac{1}{2} \times 8$$

(a) Cell theory

(Continued)

(3)

- (b) Sandwich model of plasma membrane
- (c) Mitochondrial DNA
- (d) Desmosomes
- (e) Polytene chromosome
- (f) Lysosomes
- (g) S Phase of cell cycle
- (h) Facilitated transport
- (i) Prions
- (j) cAMP.

PART – III

3. Answer any *eight* questions within 75 words each : 2 × 8

(a) Explain GPCR.

(b) What is mycoplasma ?

- (c) What are the functions of endoplasmic reticulum ?
- (d) Discuss briefly about Gap junction.
- (e) What is nuclear envelope ?
- (f) Why peroxisomes are important for a cell ?
- (g) What is endosymbiotic hypothesis ?
- (h) Differentiate between heterochromatin and euchromatin.
- (i) Describe the function of microfilament.
- (j) What are viroids ?

PART – IV

Answer all the questions within 500 words each :

4. Describe the fluid mosaic model of plasma membrane. 6 × 4

(5)

Or

(i) Differentiate between active and passive transport.

(ii) Facilitated transport.

5. Describe the structure and function of endomembrane system.

Or

(i) Describe the structure and function of microtubules.

(ii) What is golgi apparatus? Describe its structure and function.

6. Describe briefly about mitochondrial respiratory chain.

Or

(i) Discuss about the semi-autonomous nature of mitochondria.

(ii) Discuss briefly about peroxisomes.

7. Give an account of mitotic cell division.

Or

(i) Describe the structure of nucleus pore complex.

(ii) Discuss about cell cycle and its regulation.