



DBW-003-1132001

Seat No. _____

M. Sc. (Sem. II) Examination

July - 2022

Molecular Cell Biology

Faculty Code : 003

Subject Code : 1132001

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

1 Answer the following questions (Any Seven) 14

- (1) DNA replication occurs in which phase of the cell cycle and why ?
- (2) What is Coagulative necrosis ?
- (3) What is the role of Tropomyosin in Microtubules ?
- (4) Define : Fertilization
- (5) Draw a neat and labeled diagram of Flagella.
- (6) Enlist the factors responsible for causing cancer.
- (7) Enlist names of Secondary messengers (minimum four)
- (8) State the role of G-protein in brief.
- (9) What is oncogenesis ?
- (10) State the major difference between holoblastic and meroblastic cleavage.

2 Answer the following questions (Any Two) 14

- (1) Explain the phenomena and discuss the regulation of apoptosis.
- (2) Compare and contrast the phenomena of Apoptosis and Necrosis.
- (3) Enlist different stages of Meiosis and discuss them in brief.

3 Answer the following questions : **14**

- (1) Explain the chemical structure and role of actin and myosin in detail.
- (2) Write a detailed note on invitro fertilization and state its significance.

OR

- (1) Write a detailed note on Microtubules in terms of its structure and function.
- (2) Discuss the structure and function of flagella and microfilaments in detail.

4 Answer the following questions : **14**

- (1) Enlist and discuss in detail the role of proteins involved in fertilization.
- (2) Discuss the process of embryogenesis in detail.

5 Answer the following questions (Any Two) **14**

- (1) Enlist name of two techniques used in cancer research from genomics and proteomics each. Discuss one technique from genomics and one from proteomics in detail.
- (2) Enlist and discuss the characteristics of cancer cells.
- (3) Enlist the basis of cancer. Discuss the regulation of proto-oncogenes in detail.
- (4) What is the need of controlling the cell-cycle ? Discuss the regulation of cell cycle in detail.
