



MBZ-1603120102020400 Seat No. _____

M. Sc. (Biochemistry) (Sem. II) (CBCS) Examination

April / May - 2018

CBC - 4 : Cell Biology & Genetics

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

[Total Marks : 70

1 Answer briefly any **seven** of the following questions : **14**

- (a) State the functions of endoplasmic reticulum.
- (b) What are the functions of Intermediate Filaments ?
- (c) What are pluripotent stem cells ?
- (d) Write the three essential components of GPCR.
- (e) Write a note on morphogen.
- (f) What is role of cyclin in cell cycle regulation ?
- (g) Explain the process of metastasis.
- (h) What is a test cross ?
- (i) What is crossing over? When does it occur in eukaryotes ?
- (j) Explain the process of cytokinesis.

2 Answer any **two** of the following questions: **14**

- (a) Explain the techniques of FRAP and SPT.
- (b) What is the role of maternal genes in anterior posterior region formation ?
- (c) Explain in detail the Mitotic Phase.

3 (a) Describe the apoptotic' pathway in detail. **7**

(b) Describe the fluid mosaic model of Cell membrane. **7**

OR

3 (a) Describe in detail: Segmentation genes and homeotic genes. **7**

(b) Explain the Law of Segregation with suitable example. **7**

- 4 Answer the following questions : 14
- (a) Explain oncogenes and tumor suppressor genes with example.
 - (b) Write a note on Microtubules.
- 5 Answer the following questions : (any **two**) 14
- (a) What are multiple alleles? Explain any two examples in detail.
 - (b) Describe autosomal and sex linked pattern of inheritance.
 - (c) State differences between eukaryotic cell and prokaryotic cell
 - (d) Explain the signal transduction mechanism by insulin receptor.
-