



MBE-003-001110 Seat No. _____

B. Sc. (Sem. I) (CBCS) Examination

November / December – 2016

Biotechnology

**BT 101 - Introduction to Biotechnology and Cell Biology
(Old Course)**

Faculty Code : 003

Subject Code : 00110

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

[Total Marks : 70

- Instructions :**
- (1) All the questions are compulsory.
 - (2) The right side figure indicates total marks of the question.
 - (3) Draw the figure wherever necessary.

1 Objective type questions : **20**

- (1) Diameter of b-form of DNA is _____.
- (2) In _____ chromosome, the centromere is located quite near one end.
- (3) The cavity inside the blastula is called _____.
- (4) During _____ stage of development the three primary tissue layers first appear.
- (5) Some bacteria form a thick-walled _____ in response to poor nutrient conditions.
- (6) Rod shaped bacteria are called _____.
- (7) A gram-positive bacterium is stained _____ by the gram stain.
- (8) Golden rice is transgenic crop with improved _____ content.
- (9) Ribosomes are made up of _____ subunits.
- (10) Nuclei were first discovered by _____.
- (11) The rough ER is so named because it has an abundance of _____ on it.
- (12) Microfilaments are made up of _____.
- (13) Cellulose is a polymer of D-glucose units joined by _____ linkage.
- (14) The process of extracting metals from one bearing rock is called _____.
- (15) In humans, the stem cells from which all blood cells arise are found in the _____.
- (16) Lampbrush chromosomes were first discovered by _____.
- (17) Replication of the genome occurs in the _____ phase of the cell cycle.
- (18) Just prior to cell division, the diploid human body cell contains _____ chromatids.
- (19) Mature sperm cells are called _____.
- (20) Hormones are relatively long lived signals that travel throughout the body. This type of signalling is called _____.

- 2 (a) Write any **three** out of six. 6
- (1) Define : Biotechnology.
 - (2) Write a note on power house of cell.
 - (3) Give the functions of ribosomes.
 - (4) Write a note on DNA packaging in prokaryotes.
 - (5) Explain polytene chromosome.
 - (6) What is zona pellucida ? Give its importance.
- (b) Write any **three** out of six. 9
- (1) Write a note on status and future of biotechnology in developing country.
 - (2) Discuss classification system of prokaryotes.
 - (3) Short note on ribosomes.
 - (4) Write a note on fluid mosaic model.
 - (5) Describe in detail meiosis.
 - (6) Briefly describe cell-cell interaction.
- (c) Write any **two** out of five. 10
- (1) Write a note on ethical and social issues related to biotechnology.
 - (2) Explain cell theory in detail.
 - (3) Short note : Cytoskeleton
 - (4) Write a note on DNA packaging in Eukaryotes.
 - (5) Explain in detail fertilization process.
- 3 (a) Write any **three** out of six. 6
- (1) Discuss in brief : Future aspects of biotechnology.
 - (2) Write functions of chloroplast.
 - (3) Define Gametogenesis.
 - (4) Write a note on Cytoplasmic streaming.
 - (5) What are Stem Cells ?
 - (6) What is capacitation of sperm ? Give its importance.
- (b) Write any **three** out of six : 9
- (1) Application of biotechnology in the field of environment.
 - (2) Explain diversity of cell size and shape.
 - (3) Briefly describe fluorescence microscopy.
 - (4) Short note on 'Suicide Bag'.
 - (5) Write a note on 'Suicide Bag'.
 - (6) Discuss early embryonic development in short.
- (c) Write any **two** out of five : 10
- (1) Biotechnological applications in the field of medical.
 - (2) Write a note on bright field microscopy.
 - (3) Miller's experiment.
 - (4) Explain cell cycle in detail.
 - (5) Define Cancer and write a detail note on it.