

Time allowed: 3 Hours

Max. Marks: 50

**NOTE:** Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Answer the following in 3-4 lines:-

- i. What type of tissue blood is?
- ii. What are neural dendrites?
- iii. What is the function of chymotrypsin?
- iv. What is an allele?
- v. What is the function of Sertoli cells?
- vi. What is a biodegradable polymer? Give a suitable example.
- vii. What are restriction endonucleases? Give a suitable example.
- viii. What is a 'Biosafety cabinet' and its use?
- ix. What is an incinerator?
- x. What is the function of ligase in rDNA technology?

1 X 10= 10

#### UNIT-I

- IIa. What is an epithelium? Which organs possess it? Describe its important functions in detail.
- b. Draw schematic diagram of a neuron, label its parts and describe their important functions.
- c. Draw, label and describe male reproductive organ in detail. 4, 3, 3
- IIIa. What are Mendelian laws of inheritance? Describe in detail.
- b. What are heterozygous and homozygous allele and their significance?
- c. Describe important functions of small intestine including role of its enzymes in digestion. 4, 3, 3
- IVa. What is a skeletal muscle? Draw its schematic diagram, describe its structure and functions in detail.
- b. What is the significance of non-Mendelian inheritance?
- c. What is pancreases? Describe its role in the digestion and glucose metabolism. 4, 3, 3

#### UNIT-II

- Va. What is a synthetic polymer? Describe their role in tissue engineering.
- b. What is role of biopolymers as implant material? Describe their important medical applications.
- c. What is a plasmid? How it is useful in gene cloning in a bacterium? 4, 3, 3
- VIa. What are different types of biosafety cabinets? Describe the use of biosafety cabinet Type-IV.
- b. What is a biomedical waste? How it can be rendered harmless for its safe disposal? 5, 5
- VII. Write short notes on any two of the following;  
i. GLP            ii. Patent            iii. Trademark 5 x 2= 10

x-x-x