Exam.Code:0905
Sub. Code: 33264

2125

B.E. (Biotechnology), First Semester

BTBS X01: Fundamentals of Biotechnology

Time allowed: 3 Hours Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit. State clearly your assumptions.

x-x-x

I. Write briefly:

a) What is gene therapy?

b) What is IPR?

c) Write concept of biosafety?

d) What are Prokaryotic and eukaryotic cell?

e) What is biotechnology?

f) Define GLP?

g) Write application of biotechnology in agriculture industry?

h) What is most important element for origin of life?

i) Name the two scientists who experimentally tried to verify Oparin's hypothesis.

j) How does a virus increase in number? (10×1)

UNIT - I

II. Describe the key structural components of ribosome including its subunits and functional sites involved in translation. Also explain step by step process of ribosome formation. (10)

III. **a)** How free living prokaryotes became integrated organelles? Explain theory related to it and also give evidences that support theory.

b) What are key postulates and experimental evidence of Oparin-Haldane theory? (4,6)

IV. **a)** Explain various applications of biotechnology in Foodindustry.

b) What is primary purpose of genetic testing and what kind of information can it reveal about an individual's health? (4,6)

P.T.O.

UNIT - II

V. **a)** What are main objectives of Good Laboratory Practices (GLP) and how does it differ from Good Manufacturing Practices(GMP)?

b) What is the fundamental distinction between the practices and containment levels for various biosafety levels? (5,5)

VI. **a)** What are differences between skeletal, smooth and cardiac muscle tissues?

b) What is the primary function of cytoplasmic streaming with in a cell and what components are responsible for driving this movement? (5,5)

VII. **a)** What are the characteristics and hierarchical organization of skeletal muscle? What specific connective tissue layers wrap these different levels of organization?

b) What is gene therapy and its potential applications. What common method is often used to deliver therapeutic genes into patient cells? (5,5)

x-x-x