



SECTION "B"

[5Q. × 1 = 5 marks]

Fill in the blanks.

- 11) Microvilli are.....of cell membrane.
- 12) Checkpoint in M phase, arrests mitosis if the daughter chromosomes are not properly aligned on.....
- 13) Collagen constitutes about.....of the total protein of the body.
- 14) General term for a normal gene in which a gain-of-function mutation can drive a cell toward cancer is.....
- 15) .....help to inhibit free-radical production and thus protect cell from damage.

SECTION "C"

[10 Q. × 1 = 10 marks]

Define in one sentence.

- 16) Cell Theory:
- 17) Gap junction:
- 18) Recombination nodule:
- 19) Oxysomes:
- 20) Karyotype:
- 21) *Raf*:
- 22) Grana:
- 23) Maturation Promoting Factor:
- 24) Telomere
- 25) Protein kinase A

Level : B. Tech.  
Year : II  
Time : 2 hrs. 30 mins.

Course : BIOT 205  
Semester : I  
F. M. : 55

SECTION "D"

(Long answer questions)

[3 Q. × 7 = 21 marks]

- 1) Why meiotic cell division is necessary? Discuss the different stages and significance of meiosis.
- 2) How does a GTP binding protein act as a molecular switch? Elaborate the role of feedback response in generating a brief, local pulse of cyclic-AMP dependent protein kinase activity.
- 3) Explain the role of tumour suppressor genes in cancer development.

OR

Draw the well labeled diagram of Plasma membrane. Describe the modifications of cell membrane in detail.

SECTION "E"

(Short answer questions)

- 4) Write short notes on: [6 Q. × 4 = 24 marks]
  - a) Synaptonemal complex
  - b) Angiogenesis
  - c) G<sub>1</sub>& G<sub>2</sub> check points
  - d) Mitochondria
  - e) Free radical theory of ageing
  - f) Ultrastructure of Chromosome
- 5) Give *TWO* major differentiates between: [2 Q. × 2 = 4 marks]
  - a) 70S and 80S Ribosomes
  - b) Cilia and flagella
- 6) Explain why/how for the following: [3 Q. × 2 = 6 marks]
  - a) Cell membrane is regarded as "protein icebergs in a sea of lipids".
  - b) Chloroplasts have been evolved from blue green algae.
  - c) Ageing is brought by shortening of telomere.

