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1 SEM TDC BTCH G 1

2017

(November)

BIOTECHNOLOGY

(General)

Course : 101

(Biochemistry and Cell Biology)

Full Marks : 48

Pass Marks : 19/14

Time : 2 hours

*The figures in the margin indicate full marks
for the questions*

1. Choose and write the correct answer : $1 \times 5 = 5$

(a) Which of the following is an aromatic amino acid?

(i) Alanine

(ii) Glycine

(iii) Tyrosine

(iv) Methionine

(2)

(b) Which of the following is a sulphur containing amino acid?

- (i) Alanine
- (ii) Glycine
- (iii) Tyrosine
- (iv) Methionine

(c) Karyotheca refers to

- (i) vacuolar membrane
- (ii) nuclear membrane
- (iii) cell membrane
- (iv) chromosomal membrane

(d) Which of the following is a eukaryote?

- (i) *Saccharomyces cerevisiae*
- (ii) *Escherichia coli*
- (iii) *Bacillus subtilis*
- (iv) HIV virus

(e) Vitamin C is also known as

- (i) niacin
- (ii) nicotinic acid
- (iii) calciferol
- (iv) ascorbic acid

(3)

2. Write briefly about the following : $3 \times 3 = 9$

- (a) Phospholipids and glycolipids
- (b) Induced fit hypothesis
- (c) Cilia and flagella

3. Answer either [(a) and (b)] or [(c) and (d)] :

$6 \times 2 = 12$

(a) Explain the ultrastructure of bacterial cell with a neat labelled diagram. $4 + 2 = 6$

(b) Explain all the classes of human epithelial tissue with suitable diagram.

$4 + 2 = 6$

(c) Who proposed cell theory? Explain the salient features of cell theory mentioning the exceptions. $1 + 3 + 2 = 6$

(d) Explain the process of vesicular trafficking with a flowchart.

$4 + 2 = 6$

4. Explain various types of RNA. Discuss the clover-leaf model of tRNA with a suitable diagram.

$4 + 6 + 2 = 12$

Or

Name the prokaryotic initiation factors.

Explain detailed mechanism of translation in

prokaryotes with suitable diagram. $2 + 8 + 2 = 12$

5. Write short notes on any *two* of the following : 5x4

- (a) Principle and procedure of Sandwich ELISA
- (b) Ultrastructure of neurons
- (c) Phagocytosis and pinocytosis by amoeba with diagram
- (d) Weak acids and weak bases in biological system

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