VCD- 8/3/14 **BIOTECHNOLOGY-II F.Y.B.Sc. SEM II EXAM MARKS 60 2 HRS (100)**

- **All questions are compulsory.**
- **All questions carry equal marks.**
- **Draw diagram wherever necessary**

Q .I (A) Explain (any one) **(02)**

1. Chromatin
2. Cristae

Q. I (B) Fill in the blanks (any three) **(03)**

1. A network of intermediate filament called the _____is observed in animal cells.
2. _____ are proteins that function to induce and exit from M phase.
3. _____separates the cell's genetic material from the surrounding cytoplasm in eukaryotic cells .
4. Arrest at _____ check point allows repair of damage to take place before the cell enters in S phase.
5. The enzymes of TCA cycle and catabolism of fatty acids are located in the matrix of _____.
6. _____ are called power house of the cell.

Q. I (C) Answer (any two) of the following **(10)**

1. What are nucleosomes ? Explain the interal organization and functions of nucleosomes .
2. Draw the detailed structure of mitochondria and mention where the organelles' energy trapping system is located.
3. Elaborate on the role of protein kinases in regulating the cell cycle.
4. Describe the different phases of an eukaryotic cell cycle.

Q. II (A) State whether the following statements are true or false (any five) **(05)**

1. Peptide bonds join amino acids together to form proteins.
2. α – helices are involved in globular protein structure formation.
3. Phospholipid is an example of structural lipids.
4. Hydrphobic bonds stabilize the secondary structure of protein.
5. Amino acids are classified on the basis of 'R' group attached to it .
6. Isoelectric pH is the pH at which cations become anions.
7. Phospholipids are amphophillic in nature.
8. Glycine is the rigid aminoacid in concern with its structure.
9. In peptide chain φ – bond is present between C– N.
10. Phospholipids forms bilayer in contact with water.
11. Enzymes are the catalyst in biological reactions.

Contd/2...

Q.II (B) Explain the following (any two) (10)

1. Role of fattyacids in maintaining membrane fluidity.
2. General characteristics of proteins.
3. Structure of keratin with suitable diagram.
4. Ninhydrin reaction of amino acids and its significance.

Q.III (A) Fill in the blanks (any five) (05)

1. Stomach acts as _____ barrier.
2. Skin consists of ____ layers.
3. In gastro-intestinal tract, _____ is kept lower to inhibit pathogens.
4. Epithelial walls of stomach are dotted with _____.
5. _____ immunity requires prior exposure to antigens.
6. Sebum consists of lactic acid and _____ acid.
7. _____ are devoid of sebaceous glands.
8. Turbulence filter in respiratory tract removes particles as small as _____µm.
9. Lactoferrin in milk chelates _____.
10. _____ cells secrete HCl in stomach.

Q. III (B) Discuss the following (any two) (10)

1. Explain acquired immunity.
2. What are antigens ?
3. Explain physiological barrier with respect to innate immunity.
4. What are the different classes of antibodies ?

Q. IV Write short note on (any three) of the following (15)

1. G_0-quiescent stage
2. START
3. Active site of enzymes.
4. Secondary structure of proteins.
5. IgA
6. Factors influencing antigens.

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