

08/05/2015

## [Additional Exam]

FYBSc  
Biochemistry

VCD / / - BIOCHEMISTRY- II- F.Y.B.S.c- SEM II -75 MARKS - 2 1/2 HRS 25

- Note:** 1. Figures to right indicate marks.  
2. All questions are compulsory.  
3. Draw appropriately labeled diagrams wherever necessary.

**Q I) A. Define : (any Four)**

[8]

- i. G2 phase.
- ii. Non sister chromatids.
- iii. Porin protein.
- iv. Homologous chromosome
- v. Anaphasic movement.
- vi. Centromere.
- vii. Chiasmata.
- viii. Euchromatin.

**B. Explain the following terms: (any Two)**

[6]

- i. Write a short note on nuclear pore complex.
- ii. State briefly about the controlling of cell cycle.
- iii. What is the significance of mitosis in cell division?
- iv. How many types of microtubules are found during cell division?

**C. Write short note on : (any One)**

[6]

- i. Reductional phase of meiosis in cell division.
- ii. Inter phase of cell cycle.

**Q II) A. Answer the following: (Any Four)**

[8]

- i. Define renal threshold.
- vi. Define GFR
- ii. Define exopeptidase.
- vii. Define cortical nephron
- iii. Which molecule help in trypsin activation?
- viii. Define zymogen
- iv. What is the unique nature of glomerular capillaries?
- v. What do you mean by "secretion" during urine formation?

**B. Explain the following: (Any Three)**

[6]

- i. Write a short note on emulsification of lipid.
- ii. How does absorption of intact protein and polypeptide take place?
- iii. What are the compositions of glomerular filtrate?
- iv. What are the factors effecting GFR?

**C. Describe in brief :(Any One)**

[6]

- i. Carbohydrate digestion in mouth and small intestine.
- ii. Structure and function of glomerulus and Bowman's capsule.

**Q III] A. Answer the following questions: (Any Four)**

[8]

- i. Give two examples of autotrophs.
- ii. What is the physical phenomenon of staining?
- iii. Draw structure of Picric acid.
- iv. How do prokaryotic microbes divide?
- v. Give any 4 functions of microbes in pharmaceutical industry.
- vi. Explain the term "strain"
- vii. Why is Bergery's Manual used ?
- viii. What is a phylogenetic tree ?

**B. Explain the following questions in brief: ( Any Two)**

[6]

- i. Division of spherical bacteria.
- iii. Factors that affect lag phase.
- ii. Differential stains
- iv. Function of flagella.

**C. Answer in brief :(Any One)**

[6]



- i. Explain with help of graphical representation lag and log phase.
- ii. Write a short note on classification of microorganisms based on flagella.

**Q IV] 1.(A) Give example of one the following: (Any One)**

- i. What is the function of centriole?
- ii. Why does meiosis take place in germ cell?

**1. (B) Name the following: (any Three)**

- i. ....is a basic protein present in nucleoplasm. (Histone/porine/cadherine)
- ii. In S-phase excess synthesis of .....protein takes place. (DNA/ RNA/Protein)
- iii. Large protein complex present in nuclear pore is known as ..... (Nuclear pore complex /nucleolus pore complex/pore complex)
- iv. Pairing of homologous chromosome occurs at ..... phase. (Pachytene/Leptotene/diplotene)
- v. Chromosomes are held to centromere by ..... Kinetochore/sat chromosome/Chromatin)
- vi. Mitosis helps the cell in maintaining..... (Chromosome number/ chromosome quality/ Nuclear matrix).

**2.(A) Answer the following: (Any One)**

- i. Why carbohydrate cannot be digested in stomach?
- ii. What is Henle's loop?

**2.(B) Answer the following: (Any Three)**

- i. Carboxypeptidase is an example of ..... (exopeptidase/ endopeptidase/ lipase)
- ii. Glucose uptake by cell through..... (Na-dependent glucose transporter/ Na<sup>+</sup>-k<sup>+</sup> pump/ Glucose transporter)
- iii. Secretin is synthesized by the mucosa of..... (serosa cell/ pancreas/ gall bladder )
- iv. Rennin converts casein into..... (calcium/ potassium/ milk protein)
- v. In the inner visceral layer of bowman's capsule a specialised cell present called.....(podocyte/ pedicel/ squamous epithellium)
- vi. Thin ascending loop of Henle is impermeable to ....(water/ bi carbonate/ sodium)

**3.(A.) Define : (Any One)**

- i. Apoptosis.
- ii. Senescence

**3.(B) Answer the following: (Any Three)**

- i. Name microorganism employed in production of bread.
- ii. Give an example of an endospore.
- iii. Name the microorganism that causes cholera.
- iv. Abbreviation of VBNC
- v. Name the scientist who provided the lens used by Leewenhoek.
- vi. Name the kingdoms in which microorganisms are placed.

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