

- 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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