

9/10/2013

CD-09/10/13 BIOTECHNOLOGY-I F.Y.B.Sc. SEM I EXAM MARKS 60 2 HOURS (90)

NOTE:

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

Q.1 (a) Name any two of the following (02)

- Carbon source of photolithoautotrophs.
- Medium that contains some ingredients of unknown chemical composition.
- Shortest time needed to kill all organisms in a microbial suspension at a specific temperature and under defined conditions.
- Halogen used as skin antiseptic, which kills by oxidizing cell constituents and iodinating cell proteins.

Q.1 (b) Fill in the blanks of any two of the following statements. (02)

- _____ is needed for synthesis of substances like amino acids, cysteine and methionine.
- An organism which is able to grow in presence of atmospheric oxygen is called _____.
- Laminar air flow biological safety cabinets employ _____ filters to remove 99.97% of 0.3µm particles.
- Formaldehyde is marketed in aqueous solution as _____.

Q.1 (c) Define any one of the following. (01)

- Sterilization
- Growth factors

Q.1 (d) Give an account of any two of the following. (10)

- Types of culture media.
- Conditions influencing the effectiveness of antimicrobial agents.
- Any two methods used for isolation of microorganisms.
- Radiations as physical agents in controlling microorganisms.

Q.2 (a) Define any five of the following.

- Selfing
- Gene
- Phenotype
- Chromosomal mutation
- Point mutation
- Heterozygote
- Hybrid
- Backcross
- Mutation frequency
- Nonsense mutation

Contd/

Q.2 (b) Discuss any two of the following.

(10)

- i. Mendel's Laws of segregation with the help of monohybrid cross.
- ii. Two Methods used to determine the genotype of an individual.
- iii. Types of point mutation.
- iv. Induced mutation.

Q.3 (a) Give two examples each for any two of the following:

(04)

- | | |
|---------------------------------------|------------------------------|
| i. Modified roots for storage of food | iii. Species of Halobacteria |
| ii. Stem tuber | iv. Species of Nostoc |

Q.3 (b) Define any one of the following.

(01)

- | | |
|--------------|--------------|
| i. Nucleolus | ii. Akinetes |
|--------------|--------------|

Q.3 (c) Answer any two of the following.

(10)

- i. Comment on 'the excretory materials' in plants.
- ii. Discuss the different types of sub-aerial modification of roots in plants.
- iii. What are plastids? Add a note on its types.
- iv. Discuss the major groups of Archaeobacteria.

Q.4 Write short notes on any three of the following.

(15)

- i. Asexual reproduction in fungi.
- ii. Types of permanent tissues.
- iii. Heat as a physical agent for control of microorganisms.
- iv. Preservation methods of microorganisms.
- v. Symbols used in Mendelian genetics.
- vi. Missense mutation.

-----THE END-----