VCD- 07/05/2015 BIOTECHNOLOGY-I F.Y.B.Sc. SEM II EXAM MARKS 75 2 1/2 HRS (80)

- All questions are compulsory.
- Draw diagram wherever necessary

Q.I (A) Name the following (any two) (04)

1. Process in which organisms are subjected to extreme dehydration in frozen state and then sealed in vacuum.
2. The lowest temperature at which a microbial suspension is killed in 10 mins.
3. Radiations which have enough energy to knock electrons away from molecules and ionize them.
4. Halogen used as disinfectant for municipal water supplier and swimming pools.

Q.I (B) Explain the following terms (Any three) (06)

1. Antiseptic 2. Plasmolysis 3. Thermal death time 4. Disinfection

5. D value 6. Viricide

Q.I (C) Answer the following (Any two) (12)

1. Explain Filtration as a physical agent in controlling microorganisms.
2. Explain tube - dilution and agar – plate techniques for the evaluation of antimicrobial chemical agents.
3. Explain the different methods with respect to moist heat that can be used for control of microorganisms
4. Describe in brief the use of chemical agents in control of microorganisms with respect to halogens and sterilizing gases.

Q.II (A) Explain the following terms (Any four) (08)

1. Flame sterilisation
2. Macronutrients.
3. Growth Regulators
4. Totipotency
5. Organogenesis.
6. Germplasm conservation.
7. Artificial seeds.
8. Meristematic cell

II (B) Answer the following. (Any two) (12)

1. Explain the process of development in Root-tip culture and Embryo culture techniques used in the field of plant tissue culture.

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2. Write a note on sterilisation of culture vessels, nutrient media and culture room used for plant tissue culture.
3. Write about the inorganic nutrient used in media for plant tissue culture.
4. What is meant by totipotency of plant cell? And mention the importance of totipotency in plant science.

Q III (A) Give significance of the following in animal cell culture (Any two) (04)

1. HEPES buffer
2. Co_2 incubator
3. Autoclave
4. Inverted microscope

Q.III (B) State whether the following statements are true or false. (Any four) (04)

1. Hybridoma cell line is utilized for the production of antibodies.
2. The cancerous cell lines are maintained as a adherent culture.
3. The optimum CO_2 concentration required for animal cell culture is 1.5 %.
4. Subculturing of animal cell line is known as pouring.
5. DMEM stands for Dulbecco's Modified Eagle's medium .
6. The specific culture vessels used for animal cell culture are known as M flasks
7. The air flow direction of the vertical laminar is parallel to the surface of working bench.
8. Serum is used as cell disaggregating agent in animal cell culture.

Q.III (C) Explain the following. (Any two) (12)

1. Limitations of animal cell culture
2. Working of Vertical laminar air flow hood with suitable diagram
3. Advantages of serum containing media
4. Initiation of animal cell culture.

Q.IV Write a note on the following. (Any Three) (15)

1. Somatic hybridisation.
2. Synthetic seeds.
3. Ultra violet rays as a physical agent for the control of microorganisms
4. Aldehydes as chemical agent in control of microorganisms
5. Layout of animal cell culture laboratory
6. Physiochemical factors of animal cell culture.

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