

- All questions are compulsory.
- Draw diagram wherever necessary

14/3/15

Q.I (A) Name the following (Any two)

(02)

1. Laboratory apparatus designed to use steam under regulated pressure
2. Filters employed in laminar air flow biological safety cabinets to remove 99.97% of 0.3µm particles.
3. Shortest time needed to kill all organisms in a microbial suspension at a specific temperature and under defined conditions.
4. Halogen used as skin antiseptic, which kills by oxidizing cell constituents and iodinating cell proteins.

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

(06)

1. Sterilization
2. Pasteurization
3. Thermal death point
4. Plasmolysis
5. Tyndallisation
6. Ionizing radiations

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

(12)

1. Briefly describe alcohols and aldehydes as chemical antimicrobial agents.
2. Give the conditions influencing the effectiveness of antimicrobial agents.
3. Describe Phenol Coefficient method as a method for evaluating chemical antimicrobial agents.
4. Give brief account on radiations as physical agent in controlling microorganisms.

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

(08)

1. Autoclaving.
2. Somatic Embryogenesis.
3. Plant tissue culture.
4. Synthetic seeds.
5. Micronutrients.
6. Callus.
7. Antibiotics.
8. Germplasm conservation.

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

(12)

1. Write about the history of development of tissue culture technique with respect to plant tissue culture.

Contd/...2

2. Write about the use of growth regulators in media for plant tissue culture.
3. Write a note on Aseptic culture techniques maintained during the plant tissue culture experiment.
4. What is callus tissue? Describe the protocol for callus culture.

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

(04)

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|-----------------------------------|----------|
| 1. Vertical laminar air flow hood | 3. Serum |
| 2. Trypsin | 4. BSS |

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

(04)

1. Subculturing of animal cell line is known as passaging.
2. The optimum CO₂ concentration required for animal cell culture is 0.5 %.
3. Trypsin is used as cell disaggregating agent in animal cell culture.
4. If Trypsin is added to the animal cell culture medium , addition of various growth factors can be skipped.
5. The specific culture vessels used for animal cell culture are known as T flasks
6. DMEM stands for Dolphin's essential medium.
7. The cancerous cell lines are maintained as a suspension culture.
8. The air flow direction of the vertical laminar air flow is perpendicular to the surface of working bench.

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

(12)

1. Applications of animal cell culture.
2. Physiochemical requirements of animal cell culture
3. Layout of the animal cell culture laboratory.
4. Working of CO₂ incubator with suitable diagram.

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

(15)

1. Artificial seeds.
2. Genetic transformation
3. Dry heat as a physical agent for control of microorganisms.
4. Ethylene oxide as antimicrobial agent.
5. History of animal cell culture
6. Chemically defined media
