

SEAT No. _____

No. of Printed Pages : 2

[71 & A-47]

SARDAR PATEL UNIVERSITY
V SEMESTER, B.Sc. Examination (N.C.)

MICROBIOLOGY; US05CMIC05
Microbial Diversity and Ecology

13.04.18; Friday

Time: 2.00-5.00 p.m.

Total Marks: 70

Q.1. Attempt the following multiple choice questions.

(10)

1. A false tissue formed by aggregation of hyphae is known as
 - (a) Parenchyma
 - (b) Plectenchyma
 - (c) Sclerenchyma
 - (d) Collenchyma
2. Somatogamy is the
 - (a) fusion of vegetative cells or spores
 - (b) fusion of gametes
 - (c) contact between two gametangia
 - (d) none of the above
3. Forming the core of the flagellum is a central filament known as
 - (a) dictyosome
 - (b) axoneme
 - (c) cristae
 - (d) none of the above
4. HIV infects lymphocytes bearing ----- receptors on their surface.
 - (a) CD₄
 - (b) C₄D₄
 - (c) DC₄
 - (d) CD₂
5. The single burst experiment was originally devised by
 - (a) Ellis
 - (b) Burnet
 - (c) Delbruck
 - (d) Ellis and Delbruck
6. HBV is a ----- virus with an outer envelope and inner core.
 - (a) 42 nm DNA
 - (b) 40 nm DNA
 - (c) 43 nm DNA
 - (d) 42 nm RNA
7. ----- usually forms fried egg shaped colonies on bacteriological media
 - (a) Rickettsia
 - (b) Mycoplasma
 - (c) Actinomycetes
 - (d) None of the above
8. Transmission of Rickettsia to human beings occurs via
 - (a) arthropod vectors
 - (b) viruses
 - (c) bacteria
 - (d) prions
9. Mycorrhiza is an example of which of the following?
 - (a) commensalism
 - (b) amensalism
 - (c) mutualism
 - (d) synergism
10. *Enterococcus faecalis* and *Escherichia coli* together are able to convert arginine to
 - (a) ornithine
 - (b) agmatine
 - (c) putrescine
 - (d) none of the above

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Q.2. Attempt any ten out of the following briefly. (20)

1. Give two functions of haustorium.
2. Give two examples of antibiotics of fungal origin.
3. What is prosenchyma?
4. Define burst size.
5. Give two contributions of Ellis and Delbruck in the field of virology.
6. Give two examples of agents which can be used for lysing infected bacteria in Doermanns premature lysis experiment.
7. Give two features of the genus Rickettsia.
8. Name the arthropod vectors which transmits
 - (i) Rocky Mountain Spotted fever and
 - (ii) Murine Typhus fever.
9. Give the outstanding feature of the following genera:
 - (i) Sporichthya
 - (ii) Dermatophilus
10. Define parasitism
11. Citing two examples explain how microbial population in the rhizosphere benefits the plant.
12. Define the term 'niche'.

Q.3. Explain the role of fungi in the fields of agriculture and industry. (10)
OR

Q.3. Describe mycelial modifications of fungi in detail. (10)

Q.4. Write notes on:

- (i) One step growth experiment. (06)
- (ii) Characteristics of pox virus. (04)

OR

Q.4. Write notes on:

- (i) Characteristics of HIV (06)
- (ii) Prions (04)

Q.5. Write notes on:

- (i) Spirochetes. (06)
- (ii) Rickettsia (04)

OR

Q.5. Write notes on:

- (i) Actinomycetes. (06)
- (ii) Chlamydia (04)

Q.6. Citing two examples explain mutualism in depth. (10)

OR

Q.6. Enlist negative interactions among microorganisms and explain any two of them in detail. (10)

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