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No. of Printed Pages: 3

SARDAR PATEL UNIVERSITY
B.Sc. EXAMINATION - SEMESTER-5
MICROBIOLOGY – US05CMIC05
Microbial Diversity & Ecology

Date: 22/11/2013

Time: 10:30 am to 1:30 pm

Day : Friday

Total marks: 70

N.B: Figures on the right indicate marks.

Q.1 M.C.Q. (01 - mark each) 10

- 1 The growth hormone Gibberellin is isolated from
(a) *Gibberella fujikuroi* (b) *Aspergillus oryzae*
(c) *Penicillium notatum* (d) NONE OF THESE
- 2 HIV infects lymphocytes having _____ receptors on their surface
(a) CD₄ (b) AB₄
(c) DC₄ (d) NONE OF THESE
- 3 Transmission of rickettsia to human occurs via
(a) An arthropod vector (b) viruses
(c) Bacteria (d) fungi
- 4 Mycorrhizal association is an example of.....
(a) commensalism (b) mutualism
(c) Synergism (d) All of the above
- 5 The central or axial filament in fungal flagella is known as.....
(a) endoparasite (b) sheath
(c) Axoneme (d) capsule
- 6 The antigen expressed on the core of Hepatitis B virus is called as.....
(a) HBs Ag (b) HBx Ag
(c) HBc Ag (d) HBe Ag
- 7 Anoxygenic phototrophic bacteria do not evolve.....during photosynthesis.
(a) O₂ (b) N₂
(c) CO₂ (d) H₂

8 In.....interaction when one population produces substance inhibitory to another population.

- (a) commensalism (b) amensalism
(c) Mutualism (d) neutralism

9 The presence ofin the atmosphere is inhibitory to lichens.

- (a) SO₂ (b) CO₂
(c) NO₂ (d) PO₂

10 The central pore of septa in basidiomycetes bears a pore cap , which is known as.....

- (a) Membrane (b) chromosome
(c) None of these (d) Parenthosome

Q.2 Give short answers to the following questions. (Answer Any Ten) 20

1 What is the difference between holocarpic and eucarpic fungi ?

2 Draw a labelled diagram of transverse section of fungal flagellum.

3 What is the function of 'gag gene' in the reproduction of HIV?

4 Name the cells that are infected by HIV in human body.

5 Describe the distinguishing features of *Spirocheates*.

6 How *Rickettsia* differ from *Chlamydia*?

7 Define the terms Community and ecosystem.

8 Define the terms synergism and syntrophism.

9 What is somatic copulation?

10 Define Viroids and Prions.

11 Give names of four genera which metabolize sulfur compounds.

12 How does a negative interaction act to maintain ecological balance?

Q.3 (a) Explain in short about unicellular thallus. (05)

(b) Write a short note on sepa and septal pore in fungi. (05)

OR

Q.3 Explain asexual reproduction in fungi. (10)

Q.4 (a) Describe why a constant number of plaque forming units are found during latent period in one step growth experiment? (06)

(b) Write the classification of *pox* viruses. (04)

OR

Q.4 (a) How does Variola and Vaccinia virus differ? (06)

(b) Describe the morphology of *pox* virus with a help of labeled diagram. (04)

Q.5 (a) Explain difference between archaeobacteria and eubacteria. (06)

(b) Write names of disease caused by *Rickettsia* spp and arthropod vectors. (04)

OR

Q.5 Write notes on "Sulfur compound-metabolizing bacteria".

Q.6 Write an essay on negative interactions among microbial community. (10)

OR

Q.6 Write an exhaustive note on mutualism interaction. (10)

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