

Sl. No. of Ques. Paper : 1790

GC-3

Unique Paper Code : 32531101

Name of Paper : Introduction to Microbiology and Microbial Diversity

Name of Course : B.Sc. (Hons.) Microbiology (CBCS)

Semester : I

Duration : 3 hours

Maximum Marks : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt any five questions. All questions carry equal marks.

1. (a) Name the scientists associated with the following contributions (any ten):

(i) Side-chain theory of immunity

(ii) Rabies vaccine

(iii) Agar as a solidifying agent

(iv) Motility in bacteria

(v) Phagocytosis

(vi) Antisepsis

(vii) Chemoautotrophy

(viii) Nitrobacter

(ix) Small-pox vaccine

(x) Phenol as an antiseptic

(xi) Neomycin.

1×10

(b) Which period is known as the Golden Era of Microbiology? Mention any *three* important contributions which occurred during this period. 5

2. (a) Define and give examples of the following (any ten):

(i) SCP

(ii) Cyst-forming protozoa

(iii) Pathogenic yeast

(iv) Mycotoxins

(v) Heterokaryosis

- (vi) Dimorphism
- (vii) Algae found in polar regions
- (viii) DNA-containing virus
- (ix) Colonial alga
- (x) Poisonous mushroom
- (xi) Ciliated protozoa. 1×10
- (b) Discuss algal flagella with the help of a well-labelled diagram. 5
3. (a) Name the microorganism involved in the production of the following (any six):
- (i) Citric acid
- (ii) Acetic acid
- (iii) Streptomycin
- (iv) Agar-agar
- (v) Carageenan
- (vi) Bread
- (vii) Yoghurt. 1×6
- (b) Briefly describe the following:
- (i) Nutrition in protozoa
- (ii) Reserve food material in algae
- (iii) Parasexual cycle. 3×3
4. (a) Name four species of *Plasmodium* which cause malaria in human beings. 2
- (b) Draw a well-labelled diagram showing conjugation in *Paramecium*. 5
- (c) Write down the salient features of Carl Woese's Three Domain Classification System and its significance. 4
- (d) Explain scalariform conjugation in *Spirogyra* with the help of diagrams. 4
5. Differentiate between the following:
- (i) Prokaryotes and Eukaryotes
- (ii) Haplobiontic and Diplobiontic life-cycles

- (iii) Anamorph and Teleomorph
- (iv) *Aspergillus* and *Rhizopus*
- (v) Viroids and Prions. 3×5
6. (a) Classify and write the significance of the following:
- (i) *Saccharomyces*
- (ii) *Agaricus*
- (iii) *Volvox*. 2×3
- (b) Explain the following (any *nine*):
- (i) Ascus
- (ii) Contractile vacuole
- (iii) Eye-spot
- (iv) Pseudomycelium
- (v) Heterothallism
- (vi) Basidiospores
- (vii) Algal antibiotic
- (viii) Alginic acid
- (ix) Coenobium
- (x) Sporangiphore. 1×9