

This question paper contains 3 printed pages.]

Your Roll No.

1447

A

B.Sc. (Hons.)/I

MICROBIOLOGY—Paper III

(Bacteriology)

(Admissions of 2004 and onwards)

Time : 3 Hours

Maximum Marks : 60

*(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) Define the following terms (any *six*) :

- (i) L-forms.
- (ii) Generation time.
- (iii) Carboxysomes.
- (iv) Signature sequences.
- (v) Chemolitho heterotrophs.
- (vi) Compatible solutes.
- (vii) Amphitrichous flagellation.

$1 \times 6 = 6$

(b) What is polyphasic taxonomy?

2

(c) Explain different phases of bacterial growth in a batch culture.

4

[P.T.O.]

1447

(2)

2. (a) Write short notes on :

(i) Methanogens.

(ii) Plasmids.

(iii) Interrupted mating experiment. $3 \times 3 = 9$

(b) Why do we use peptones, yeast extract and beef extract in a complex media? 3

3. (a) Explain the following :

(i) Agar is a good solidifying agent.

(ii) Membrane filtration is a means of measuring bacterial growth.

(iii) Thermophiles have lipids rich in saturated fatty acids. $2 \times 3 = 6$

(b) Give various methods of preservation of bacterial culture. 4

(c) What are transposons? 2

4. (a) What are different steps in bacterial sporulation? 4

(b) Discuss the principle of phase contrast microscope. 2

(c) What are Mycoplasma? 2

(d) What are molecular Koch's postulates? 4

5. (a) Differentiate between gram + ve and gram - ve cell walls. 3

(b) Discuss the molecular mechanism of motility. 4

(c) Name diseases caused by the following bacteria :

(i) *Rickettsia*.

(ii) *Helicobacter*

(iii) *Chlamydia*. $1 \times 3 = 3$

(3)

1447

- (d) Discuss the bacterial enzymes produced to remove toxic products of molecular oxygen. 2
6. (a) What are continuous cultures? Enlist the differences between chemostat and turbidostat. 3
- (b) Differentiate between transformation in gram + ve and gram - ve bacteria? 3
- (c) Give an example of bacteria having more than one chromosome. 1
- (d) Differentiate between sphaeroplast and protoplast. 2
- (e) What is ribotyping? 3

www.FirstRanker.com