2008

MICROBIOLOGY

PAPER—XX

Full Marks : 40

Time : 2 hours

Answer any **two** questions from each Group

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers whenever necessary

GROUP—A

[*Marks* : 20]

Answer any *two* questions from the following

1. (*a*) Define probiotics, prebiotics and synbiotics.

(*b*) Briefly describe the molecular mechanism of induction of host immunity by probiotic bacteria.

(*c*) State the healthcare effects of probiotic organism *Bifidobacterium bifidum*.

(*d*) Indicate the relationship between probiotics and prebiotics in functional food. 3 + 3 + 2 + 2

2. (*a*) What do mean by primary and secondary metabolites ?

(*b*) 'The 6-APA is the intermediate of all semisynthetic penicillin.' Justify the statement.

(*c*) What is meant by biodegradable plastic ? Write scientific name of a producer bacterium.

(*d*) Why *E. coli* is considered as the most useful producer of recombinant therapeutic proteins ? 2 + 3 + 2 + 3

3. Write short notes on (any *four*) : $2\frac{1}{2} \times 4$

(*i*) Merits and demerits of single cell proteins

(*ii*) Bottom fermented beers

(*iii*) Clarification of wine

(*iv*) Application of nanomedicine

(*v*) PHA and PHB

(*vi*) Usefulness of adult and embryonic stem cell.

GROUP—B

[*Marks* : 20]

Answer any *two* questions from the following

4. (*a*) Define 'fermented food'.

(*b*) 'Fermented foods are nutritious, digestible and safe'—explain.

(*c*) Classify the fermented foods giving examples on the basis of raw materials.

(*d*) Name two fermented foods prepared from each of the following raw materials :

(*i*) Milk,

(*ii*) Vegetables. 2 + 3 + 3 + 2

5. Discuss the principles of food preservation. Point out the different methods of food preservation. Write down the types of spoilage generally found in canned food. Discuss the effects of canning on nutritive value of the food. $3 + 2 + 3 + 2$

6. Answer the following: $2\frac{1}{2} \times 4$

   (*a*) Afla toxin.

   (*b*) Blue cheese preparation.

   (*c*) Bacteriocin and its application.

   (*d*) Food colorant from fungus.
