NKT/KS/17/5090

Bachelor of Science (B.Sc.) Semester—II (C.B.S.) Examination

MICROBIOLOGY (MICROBIAL PHYSIOLOGY)

Compulsory Paper—1

Time : Three Hours] [Maximum Marks : 50

Note :— (1) **ALL** questions are compulsory and carry equal marks.

(2) Draw well labelled diagrams wherever necessary.

1. (a) Explain various basic nutritional requirements of bacteria. 5

(b) Write a note on diauxic culture. 5

OR

(c) Define non-synthetic media. Give composition of nutrient agar and describe significance of each ingredient. 5

(d) Explain the selective and differential media with suitable examples. 5

2. What is continuous culture ? Explain different methods to obtain continuous culture. 10

OR

Describe various phases of typical growth curve. 10

3. (a) Explain principle and applications of autoclave. 2½

(b) Describe pasteurization process alongwith its significance. 2½

(c) Explain tyndalization process. 2½

(d) Explain the role of osmotic pressure as a means of microbial control. 2½

OR

(e) Write characteristics of ideal antimicrobial agents. 2½

(f) Explain mode of action of UV radiation for microbial control. 2½

(g) Write a note on laminar air flow system. 2½

(h) Explain control of microorganisms employing low temperature. 2½

4. Discuss phenol coefficient in detail. How is germicide evaluated by phenol coefficient method ? 10

OR

Discuss the different factors influencing antimicrobial activity. 10

5. Solve any ***ten*** :

(i) Define Lithotrophs.

(ii) What is axenic culture ?

(iii) Give any two examples of enriched media.

(iv) Define generation time.

(v) Name any two factors affecting bacterial growth.

(vi) Give any two modes of bacterial reproduction.

(vii) Give temperature and time requirements for sterilization by hot air oven.

(viii) Define sanitizer.

(ix) What is photoreactivation ?

(x) Name any two gaseous sterilizing agents.

(xi) What is oligodynamic action ?

(xii) Define cationic detergents. 1×10