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UG/II/MICB/H/IV/17(Old)

2017

MICROBIOLOGY

[Honours]

PAPER—IV:

Full Marks : 90

Time : 4 hours

*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 wherever necessary

[OLD SYLLABUS]

GROUP – A

Answer any **two** questions, taking at least **one**
question from each Sub-groups : 15 × 2

Sub-group – A(a)

1. (a) Differential between natural acquired immunity. 2

(Turn Over)

(2)

- (b) What is monoclonal antibody ? How can you produce it ? Write two application of it. $2 + 6 + 2$
- (c) Write various components of complements. 3
2. (a) Define immunoglobulin. 2
- (b) Write the structure of immunoglobulin. 5
- (c) Classify immunoglobulin and write its function. $5 + 3$

Sub-group – A(b)

3. (a) Why milk is highly susceptible to microbial attack ? 3
- (b) Describe the role of high concentration of sugar and salt in food preservation. $2 + 2$
- (c) Chemical preservation safe or not—explain. 2
- (d) How can you prevent food-borne illness ? 3
- (e) What is mycotoxins ? 3

4. (a) Discuss the general guideline of food preservation. 4
- (b) How does a child get natural microorganism within his/her body during birth ? How they get immunated naturally ? 2 + 2
- (c) How egg is naturally preserved ? 2
- (d) Write the name organism and the production of sauerkaret through a flow chart. 5

GROUP – B

Answer any five questions, taking at least two questions from each Sub-groups : 8 × 5

Sub-group – B(a)

5. (a) How does antibody react with antigen ? Show with sketches. 4
- (b) Describe the structure and function of class-I MHC molecules. 4
6. (a) Why and how freezing is effective to preserve food ? 2 + 2

- (b) What is endotoxin ? Name the organisms responsible for botulism. 2 + 2
7. (a) Discuss the current strategies followed for the treatment of tuberculosis. 4
- (b) Briefly describe mechanism of action of streptomycin. 4
8. How is drug resistance developed in microbes ? 8

Sub-group – B(b)

9. What is inflammation ? Diagrammatically explain all the steps of inflammation. 2 + 6
10. (a) Write mode of action of gresiofulvin. Write its source organism. 3 + 1
- (b) Describe the dignosis process for malaria detection. 4
11. Name the causal organism agent, spreading, disease symptoms and preventive measures of AIDS. 2 + 2 + 2 + 2

12. (a) Define fermentation. 2
- (b) Write down the industrial production of amylase. 6

GROUP – C

Answer any five questions, taking at least two questions from each Sub-groups : 4 × 5

Sub-group – C(a)

13. Write a short note on pathogenesis by *Salmonella typhi*. 4
14. Briefly describe the process for curd production. 4
15. Discuss the epidemiology of leprosy and hepatitis. 2 + 2
16. Why on sweat microorganism grow faster? Name two microbial pathogens which cause skin infection. 2 + 2

Sub-group – C(b)

17. Briefly describe the process canning food preparation. 4

18. Write a short note on quality assurance. 4
19. Discuss the different methods of enzyme immobilization. 4
20. (a) What is lyophilization? 2
- (b) Under what conditions does *Aspergillus niger* accumulate citric acid in large quantities. 2