2018

M.Sc. 1st Seme. Examination

BOTANY

PAPER—BOT-101

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

Microbiology

1. Answer any *four* questions : 4×2

(a) What are prions ? Name a disease caused by them.

(b) Name one non-leguminous symbiotic nitrogen fixer. Mention its host.

(c) What is active artificial immunity ? Give example.

(d) What is hop ? Mention its use.

(e) What is bioplastic ? Mention its source.

(f) Mention different functions of bacterial capsule.

(g) What is 'mot' protein ? Mention its function.

(h) What is procain penicillin.

2. Answer any *four* questions : 4×4

(a) Discuss primary characteristics of an immune system.

(b) Schematically represent the E. D. pathway.

(c) Write down the process of synchronous culture. Mention its application.

(d) Write down the process of gene mapping through interrupted mating experiment.

(e) Draw and discuss detail structure of a bacterial endospore.

(f) During Log-phase growth of a bacterial culture, a sample was taken at 9:30 a.m. and found to contain 10,000 cells per mililiter. A second sample was taken at 7:24 p.m. and is found to contain 1,00,00,000 cells per mililiter. What is the generation time of that bacteria in hour ?

(g) What is Winogradsky column ? Distinguish between total coliform and fecal coliform.

(h) Draw and discuss process of direct ELISA.

3. Answer any *two* questions : 2×8

(a) Discuss six kingdom and three domain concept of Carl Woese. Mention causal organism of plague and hooping cough. 6+2

(b) (i) Differentiate between killed vaccine and attenuated vaccine.

(ii) Define Associative symbiosis with example. What is Shepard's crook ? 4+4

(c) Draw and discuss detailed structure of cell wall of gram negative bacteria. What are magnetosomes ? Mention their utility. 5+1+2

(d) Discuss different methods for enumeration of viruses. Name a double stranded RNA and single stranded DNA virus. What are enveloped viruses ?