M. SC. (Microbiology) SEM-II (C.B.C.S.) (2012 COURSE) : SUMMER - 2019

SUBJECT: ANALYTICAL TECHNIQUES

Day: **Saturday** Time: 03.00 PM TO 06.00 PM
Date: **20/04/2019** Max. Marks: 60

S-2019-1220

N.B:

1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Explain fluorescence spectroscopy with respect to **(15)**

i) principle ii)instrumentation iii) uses

OR

Describe centrifugation technique with respect to

i) principle ii) types iii) applications

Q.2 **a)** State the principle and working of electrophoresis. **(08)**

b) Explain the principle of Gel exclusion chromatography using scematic diagram. **(07)**

Q.3 Attempt **ANY THREE** of the following: **(15)**

a) Describe any two detectors used in chromatography

b) Write methods and tools used for measuring radioactivity.

c) What is HPLC?

d) How is SD-PAGE used to study proteins?

e) Explain the term "radioactive decay' and 'half life'

Q.4 Attempt **ANY THREE** of the following: **(15)**

a) Draw the instrumentation diagram for double beam spectrophotometers.

b) How gas chromatograph (instrument) is used to study microorganism?

c) What is applied centrifugal field at a point equivalent to 7 cm from the center of rotation and angular velocity 3000 rad/s?

d) What are the safety measures employed in handling radioisotopes?

e) Write note on post electrophoretic methods in the study proteins.

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