PG/IS/BOT-104/15

M.Sc. 1st Semester Examination, 2015

BOTANY

PAPER—BOT-104

Full Marks : 40

Time : 2 hours

Answer **Q. No. 1** and any **two** from the rest

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

1. Answer any *ten* questions from the following : 2×10

   (*a*) What is the function of oil when used with the oil immersion objective ?

   (*b*) Where are teichoic acids present in the cell wall of bacteria ? Mention its function.

   (*c*) Differentiate antiseptic and disinfectant.

(*d*) Name the Immunoglobulin (Ig) found in mother's brest milk. What kind of immunity are developed by baby after receiving breast milk ?

(*e*) Why 16s rDNA sequence is useful in bacterial taxonomy ?

(*f*) Define plasmid and episome.

(*g*) What is animalcules ? Who first reported it ?

(*h*) What is synthetic media ? How does it differ from complex media ?

(*i*) What is tripple vaccine ? Give example.

(*j*) Write down the full form of :

BCG, LPS, ATCC, APC

(*k*) What is 'Sufu' ? Which raw materials and which microorganisms are required for its production ?

(*l*) Explain why obligate anaerobic micro-organisms cannot tolerate molecular oxygen.

(*m*) Mention the name of a non-leguminous symbiotic nitrogen fixer and its host.

(*n*) Distinguish between T_4 and *E.Coli* DNA ligase.

(*o*) Write down contributions of

(*i*) Sergei Winogradsky

(*ii*) Edward Jenner.

2. (*a*) How would you develop a synchronous culture of bacteria ?

(*b*) Briefly describe the natural transformation mechanism of Gram(+) bacteria and state how it differ from that of Gram(–) bacteria.

(*c*) Mention functions of bacterial capsule.

$3+(3+2)+2$

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

(*i*) ED pathway

(*ii*) Blood grouping

(*iii*) Semisynthetic antibiotic

(*iv*) Red wine

(*v*) ELISA

(*vi*) Archaea.

4. (*a*) Compare :

(*i*) Agglutination and precipitation.

(*ii*) Mode of action of UV ray and X-ray.

(*b*) Write down primary characteristics of an immune system.

(*c*) How plant viruses are cultivated ?

(2 + 2) + 3 + 3

5. (*a*) State the differences between sterilization and pasteurization.

(*b*) How does gene mapping can be made by interrupted matting of bacteria ?

(*c*) Distinguish between viroids and prions.

(*d*) Write down five properties of pBR322.

2 + 3 + 2 + 3
