

**M. SC. (MEDICAL BIOTECHNOLOGY) SEM-IV (CHOICE
BASED CREDIT SYSTEM) : SUMMER - 2018
SUBJECT: NANOTECHNOLOGY IN MEDICINE**

Day: Wednesday
Date: 11/04/2018

Time: 10.00 AM TO 01.00 PM

S-2018-1175

Max. Marks : 60

N.B.:

- 1) Q. No. 1 and Q. No. 5 are **COMPULSORY**. Answer **ANY TWO** questions from Section – I and **ANY TWO** from Section-II from the remaining questions.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw diagrams **WHEREVER** necessary.
- 4) Answer to both the sections should be written in the **SEPARATE** answer books.

SECTION-I

- Q.1 Attempt any five of the following (10)
- a) Define nanomedicine
 - b) Explain interdisciplinary nature of nanotechnology
 - c) What are liposomes? Write its use in nanotechnology
 - d) Write the use of magnetic nanoparticles in nanotechnology
 - e) What are fullerenes?
 - f) Write the use of nanotechnology in cancer medicine
- Q.2 Explain the following (10)
- a) Ligand directed active targeting
 - b) Personalized medicine
- Q.3 Explain the use of the following in nanotechnology (10)
- a) Atomic force microscope
 - b) TEM
- Q.4 Write short notes on characterization of nanoparticles using any two of the following (10)
- a) Photoluminescence microscopy
 - b) Charge distribution analysis
 - c) UV-Vis spectroscopy

SECTION-II

- Q.5 Attempt the following questions (10)
- a) Give detailed account of the use of proteins in nanobiosensors
 - b) Write in detail nanobiotechnological approach on gene therapy
- Q.6 Write short note on ANY TWO of the following (10)
- a) Electrochemical biosensors
 - b) DNA based biosensors
- Q.7 Explain working of the following (10)
- a) Optical biosensors
 - b) Acoustic biosensors
- Q.8 Describe the applications of the following (10)
- a) Lab on a chip

OR

- b) RNA based biosensors

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