

M. TECH. (NANO TECHNOLOGY) SEM-I (CBCS – 2015 COURSE) :

WINTER - 2017

SUBJECT: NANO BIOLOGY

Day: **Monday**
Date: **22/01/2018**

W-2017-2749

Time: **11.00 AM TO 02.00 PM**
Max. Marks: 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.

SECTION-I

Q.1 What is DNA? Describe Watson and Crick model of DNA. (10)

OR

- a) What is a cell? Describe structure of a eukaryotic cell? (05)
- b) Write a note on Lock and key model of enzyme action. (05)

Q.2 What is a protein? Describe tertiary and quaternary structure of proteins. (10)

OR

- a) Write a note on translation. (05)
- b) Write a note on lipid bilayer. (05)

Q.3 What do you understand by immunity? Describe acquired immunity with a suitable example. (10)

OR

- a) Write a brief note on monosaccharides and disaccharides. (05)
- b) Write a short note on T- cells. (05)

SECTION-II

Q.4 Define DNA nanowires with a suitable diagram. Describe their applications. (10)

OR

- a) Write a short note on intermediate filaments. (05)
- b) Write a short note on bacterial flagellar motor. (05)

Q.5 Enlist different methods of biological synthesis of nanoparticles. Explain in detail virus based synthesis of nanoparticles. (10)

OR

- a) Write a short note on S- layer and its applications in nanotechnology. (05)
- b) Write down the major differences in the synthesis of gold nanoparticles by chemical and plant based methods. (05)

Q.6 What are the different types of nanomaterials used in biomedical domain? Describe magnetic nanoparticles and their applications in drug delivery. (10)

OR

- a) Write a short note on dendrimers. (05)
- b) Write a short note on nanosensors. (05)