

T.Y.B.SC. SEM – VI (2014 COURSE) : SUMMER - 2018
SUBJECT : ELECTIVE-II (a) PHYSICS OF NANOMATERIALS

Day : **Monday**
Date : **23/04/2018**

S-2018-0787

Time : **12.00 NOON TO 02.00 PM**
Max. Marks : 40.

N.B.:

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the **RIGHT** indicate full marks.
 - 3) Draw neat diagrams **WHEREVER** necessary.
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Q.1 Attempt any **TWO** of the following: **(10)**

- a) Write detailed note on significance of nano-size and properties.
- b) Explain the term spray pyrolysis. Describe the advantages of the ultrasonic spray technique.
- c) Draw and explain the block diagram of the Uv-Visible spectrometer.

Q.2 Attempt any **TWO** of the following: **(10)**

- a) Describe the use of nanomaterials in defence field.
- b) Write note on the electrical properties of the nanomaterials.
- c) What is the single walled nanotube? Give its applications.

Q.3 Attempt any **TWO** of the following: **(10)**

- a) What do you mean by nanomaterials? What are the challenges in nanotechnology?
- b) Describe the co-precipitation method used for the preparation of nanomaterials.
- c) State the different applications of X-ray diffraction method.

Q.4 Attempt any **FIVE** of the following: **(10)**

- a) State the types of the nanomaterials on the basis of structural configuration.
- b) What is top-down approach?
- c) State any one physical method with principle used for preparation of nanomaterials.
- d) Write in short on Nanoscience.
- e) Write any four applications of nanomaterials in medical field.
- f) State any two features of sol-gel method.
- g) Draw the block diagram of transmission electron microscope.

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