T.Y.B.SC. SEM – VI (CBCS - 2016 Course) : SUMMER - 2019

SUBJECT: ELECTIVE : PHYSICS OF NANOMATERIALS

Day : Wednesday
Date : 24/04/2019

S-2019-0921

Time : 03.00 P.M. To 06.00 P.M
Max. Marks :60

N.B.

1) All questions are **COMPULSORY.**
2) Figures to the **RIGHT** indicate **FULL** marks.
3) Draw neat diagrams **WHEREVER** necessary.

Q 1. Attempt any **Two** of the following. **(12)**

(a) Describe the technique of scanning electron microscope with suitable diagram.
(b) Explain the Sol-gel method for nanoparticles.
(c) Write a short note on uv-visible spectroscope.

Q 2. Attempt any **Two** of the following. **(12)**

(a) Explain the physical vapor deposition technique with neat suitable diagram.
(b) What are the nanotubes ? Explain the types of nanotubes.
(c) Explain the thermal and electrical properties of nanoparticles.

Q 3. Attempt any **Two** of the following. **(12)**

(a) Write down the applications of nanoparticles in sports and medical.
(b) Describe the high energy ball milling method to synthesize nanomaterials.
(c) Explain 0-D, 1-D, 2-D, 3-D nanoparticles.

Q 4. Attempt any **Three** of the following. **(12)**

(a) Explain the Synthesis of ZnO nanoparticle.
(b) Describe the spray pyrolysis method.
(c) Write a short note on quantum dots.
(d) What are the nanoparticles? What are the properties of nanoparticles?

Q 5. Attempt any **Four** of the following. **(12)**

(a) Write a short note on RF Sputtering.
(b) Describe the X-Ray diffraction.
(c) Explain the process of melting of nanoparticles.
(d) Explain the magnetron sputtering.
(e) Describe the Top down and bottom up process to synthesize nanoparticles.
(f) Write a short note on cluster beam deposition.

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