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PG2S-080-B-22
M.Sc. II Semester (CBCS) Degree Examination
MATERIALS SCIENCE
Nanoscience and Technology
Paper - OET - 2.1
(NEW)

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates.

Write question number clearly.

PART-A

Answer any **Eight** of the following.

(8×2=16)

1.
 - i) State the significance of Feynman's vision.
 - ii) Give the classification of nanomaterials.
 - iii) Why inert gas is used in PVD?
 - iv) What is the principle of pulsed laser deposition?
 - v) Give the necessity of vacuum during characterization of nanomaterials.
 - vi) Why an alloy is preferred as a tip material for scanning tunneling microscope?
 - vii) What is a nature nanophenomenon?
 - viii) Mention the uses of phase change memory devices.
 - ix) What do you mean by quantum dot?
 - x) Which kind of magnetism dominates in nanomaterials? And why?

PART-B

Answer any **Four** of the following.

(4×16=64)

2. Discuss the effect of size on the mechanical, physical, chemical and magnetic properties of nanomaterials.
3. With a neat diagram, explain the sputtering process.

4. Explain the mechanism of colloidal precipitation in the synthesis of nanomaterials.
 5. Describe the procedure for mechanical testing of nanomaterials.
 6. Highlight the salient features of CNT and graphene-based devices.
 7. Write short notes on any **Two** of the following: **(2×8=16)**
 - a) Nanocomposites
 - b) Surface characterization of nanomaterials.
 - c) Applications of nanomaterials in space.
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