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Question Paper Code: 59771

B.E./B.Tech. DEGREE EXAMINATION, SEP 2020

Open elective

Civil Engineering

15UME973- SYNTHESIS OF NANO MATERIALS

(Common to CSE,ECE,EEE,EIE,IT,Chemical,Biomedical and Agriculture Engineering branches)

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any Six of the following Questions)

- One Nano meter is equal to ----- meter CO1- R
(a) 10^{-3} (b) 10^{-6} (c) 10^{-9} (d) 10^{-12}
- Nano sponge is similar to CO1- R
(a) White blood cell (b) Red blood cell
(c) Bone (d) Not applicable
- An example for non-crystalline structure CO2- R
(a) Zeolite (b) Colloid (c) Crystal (d) Cluster
- In Electrochemical approach, the energy conversion is CO2- R
(a) Chemical -> electrical (b) Mechanical -> electrical
(c) Thermal -> electrical (d) Electrical -> chemical
- Lithography means CO3- R
(a) Fabrication (b) Production (c) Printing (d) None of the above
- One micron equals to _____mm. CO3- R
(a) 0.1 (b) 0.01 (c) 0.001 (d) 0.0001

7. The beam size in e-beam writing CO3- R
 (a) 1nm (b) 10 nm (c) 100 nm (d) None of the above
8. Atomic number of silicon is CO4- R
 (a) 12 (b) 14 (c) 16 (d) 18
9. _____uses reactor and a regenerator CO4- R
 (a) Catalytic cracking (b) Cell (c) Solid (d) Molecule
10. Reactor related with CO4- R
 (a) Polymer chain (b) Nuclear chain
 (c) Supply chain (d) All of the above

PART – B (3 x 8 = 24 Marks)

(Answer any Three of the following Questions)

11. Describe with neat sketch about the mechanical alloying of materials. CO1- U (8)
12. Sketch and describe the template synthesis method. CO2- App (8)
13. Explain elaborately about the vapor deposition methods. CO3- Ana (8)
14. With neat sketch explain about the carbon nanotubes structures CO4- U (8)
15. Discuss the various approaches of smart glass tubes. CO4- U (8)