

CBCS SCHEME

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15NT563

Fifth Semester B.E. Degree Examination, Dec.2018/Jan.2019 Nanodevices and Applications

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain in detail about sensors and their classification. Write a note on microsensor, nanosensor and biosensors. (08 Marks)
b. Discuss the principle of applications of magnetic sensors. (08 Marks)

OR

- 2 Explain in detail about optical sensors, light sources and applications. (16 Marks)

Module-2

- 3 a. Write about nano structured gas sensors and performance factors. (10 Marks)
b. Write a note on nanomechanical sensors. (06 Marks)

OR

- 4 Write a detailed note on one dimensional gas sensor and its classification. (16 Marks)

Module-3

- 5 a. Explain briefly the nano imprint lithography. Mention its advantages. (10 Marks)
b. Explain about NEMS and NEMS resonators. (06 Marks)

OR

- 6 a. Discuss about preparation of polymeric nanofibre. (10 Marks)
b. Explain stencil litho graphy. (06 Marks)

Module-4

- 7 a. Explain about photoinduced charge transport in DNA. (08 Marks)
b. Write a note on DNA – gold nano conjugates. (08 Marks)

OR

- 8 a. Discuss about electronic devices based on DNA. (08 Marks)
b. Describe the electrical manipulation of DNA on metal surfaces. (08 Marks)

Module-5

- 9 a. Discuss about the applications of biosensor based instruments to the bioprocess industry. (10 Marks)
b. Explain about Biochip and BioMEMS. (06 Marks)

OR

- 10 a. Explain about non – invasive biosensors in clinical analysis. (10 Marks)
b. Discuss about Biocore with a diagram. (06 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.