C. ABDUL HAKEEM COLLEGE (AUTONOMOUS), MELVISHARAM - 632 509. SEMESTER EXAMINATIONS, NOVEMBER - 2018

B.Sc., PHYSICS SEMESTER V U15EPH501 - MATERIAL SCIENCE (ELECTIVE – I)

Time: Three Hours Maximum: 75 Marks

SECTION - A $(10 \times 2 = 20 \text{ Marks})$

Answer ALL Questions.

- 1. What is molecular beam epitaxy?
- Define spin coating.
- State Bragg's law.
- 4. Give the principle of UV spectrometer.
- 5. Define: quantum dots.
- 6. List out the magnetic properties of Nano material.
- 7. What is Nano phase material?
- 8. Mention the types of carbon Nano Tube.
- 9. What you mean by biomaterial?
- 10. What are Cermets?

SECTION - B (5 X 5 = 25 Marks)

Answer ALL Questions.

11. a) Write a note on High temperature solution growth of crystal

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- b) Explain sol gel technique with a neat sketch
- 12. a) Discuss the principle, construction and working of SEM

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- b) How the measure the electrical conductivity of thin film?
- 13. a) Explain the size effect of Nano material.

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- b) Distinguish between nanomaterial and bulk material.
- 14. a) Describe the plasma arcing synthesis.

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- b) List out the Information field application of Nano material.
- 15. a) What are Metallic glasses? Explain.

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b) write a short note on fiber reinforced metals.

SECTION - C $(3 \times 10 = 30 \text{ Marks})$

Answer ANY THREE Questions.

- Describe in detail about spray pyrolysis
- Explain the construction, working of UV spectrometer with a neat diagram.
- 18. Write an essay on properties of Nano materials
- Discuss the various field application of Nano materials
- 20. Write a note on (i) high temperature material (ii) ceramic material.

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