

COURSE CODE - 6030101

M.PHIL DEGREE EXAMINATION - JAN 2009

M.PHIL (PHYSICS)

**ADVANCED MATERIAL SCIENCES AND ANALYTICAL
TECHNIQUES**

(For Candidate Admitted from calendar 2007 onwards)

Time: 3 Hours

Max. Marks: 100

Section - A

Answer ALL the Questions:

10 X 3 = 30

1. What are semi conductor give two examples?
2. Define super conductor?
3. What is a polymer semiconductor?
4. Define electrical conductivity?
5. What is mean by composites?
6. Write about principles of imaging?
7. What are smart materials?
8. Write IR, Raman and UV Regions?
9. Write the applications of NMR?
10. What is mean by mass Spectrometry?

Section - B

Answer any FIVE Questions:

5 X 6 = 30

11. Write about ferroelectric semiconductors?
12. Explain about High Tc Tapes?
13. Explain photo conductive polymers?
14. Write a short note on optical storage materials?
15. Write about shape memory alloys?
16. Explain the experimental techniques of Raman Effect with near diagram?
17. Write about chemical shift in NMR Spectra?
18. Explain nitrogen Rule?

Section - C

Answer any TWO Questions:

2 X 20 = 40

19. Explain about
 - a. super Conducting magnets
 - b. High temperature Super Conductors
20. Write about
 - a. Composition and structure of polymers
 - b. LEP's design and fabrication
21. Write a note on
 - a. Dilute magnetic semiconductor
 - b. Super conducting and piezoelectric materials