Code No: 138FR **R16**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year II Semester Examinations, December - 2020
CHARACTERIZATION OF NANOMATERIALS
(Mechanical Engineering)

Time: 2 Hours **Max. Marks: 75**

Answer any Five Questions
All Questions Carry Equal Marks
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1. Discuss the working principle and applications of electron microscope with a neat sketch. [15]

2. Discuss the working of electrostatic and electromagnetic lenses in microscope. [15]

3. With a schematic diagram, explain the theory of operation and importance of beam spot size in Scanning Electron Microscopy (SEM). [15]

4. Describe the theory of operation and instrumentation involved in transmission electron microscopy. [15]

5. Explain the working principle and applications of high resolution transmission electron microscopy. [15]

6. Explain the functions of detector in atomic force microscopy. [15]

7. Explain about tapping mode and contact mode of imaging in atomic force microscopy.[15]

8. With a neat sketch, explain the instrumentation, theory of operation and applications of UV spectroscopy. [15]

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