Code No: 138FV **R16**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year II Semester Examinations, December - 2020
DESIGN AND SELECTION OF ENGINEERING MATERIALS
(Common to ME, MCT)

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

Answer any Five Questions
All Questions Carry Equal Marks
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1. Explain in detail the procedure adopted for selection of materials. [15]

2. Explain the difficulties in designing the industrial components by casting and welding process. [15]

3. Define intermetallics. List any two intermetallics. Write the properties and applications for each of them. [15]

4. Explain the following.
   a) Low cycle fatigue (LCF)
   b) Hot corrosion resistance. [7+8]

5.a) List out the reasons why fusion reactors are better than fission reactors.
 b) What are the factors to be considered in designing an alloy for nuclear reactors. [7+8]

6. Explain the radiation damage on the following:
   a) Yield strength of materials
   b) DBTT of materials. [7+8]

7. Differentiate between ceramics, composites and polymers and write the applications of each. [15]

8. Explain in detail about the following:
   a) Aluminides
   b) Thermal properties of materials. [7+8]

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JNTUH Used Papers 2020