Code: 9D15106c

M.Tech I Semester Supplementary Examinations February/March 2018

NON DESTRUCTIVE EVALUATION

(Machine Design)

(For students admitted in 2012, 2013, 2014, 2015 & 2016 only)

Time: 3 hours Max. Marks: 60

Answer any FIVE questions

All questions carry equal marks

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1 Illustrate the sequential formation of eddy currents in a material. Explain the different types of probes used in eddy current testing with neat sketches.

2 Discuss about radiographic image quality and detail visibility of X-ray films.

3 Discuss about exposure charts in radiography and explain their construction and usage in radiography. Comment on radiographic equivalence and latitude charts.

4 Explain the ultrasonic weld inspections that are typically performed on weldment using a straight beam transducer in conjunction with an angle beam transducer and wedge in detail.

5 Explain the working principle of ultrasonic a scan technique with block diagram and give its applications.

6 The role of NDT is not only to detect defects that are occurred already, but also to predict the impending failures. Explain with neat sketches how acoustic emission technique can be used for the above purpose.

7 Suggest, with necessary justification, a suitable NDT technique for the detection of the following discontinuities:
(i) Internal inspection of large cast iron castings of thickness more than 400 mm.
(ii) Continuous monitoring of welded structures for occurrence of cracks during service.

8 Narrate about the information that, one can absorb in a careful visual inspection of a sand casting and discuss its applications.

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