Registration No. : | | | | | | | | | | |

Total number of printed pages – 2

B. Tech

PEMT 5404

Seventh Semester (Special) Examination – 2013

JOINING OF MATERIALS

BRANCH : MME

QUESTION CODE : D 447

Full Marks – 70

Time : 3 Hours

*Answer Question No. **1** which is compulsory and any **five** from the rest.*
The figures in the right-hand margin indicate marks.

1. Answer the following questions : 2 × 10

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(a) What are the fluxes used in brazing ?

(b) What should be the good characteristics of the spot welding electrodes ?

(c) Name any two limitations of gas shielded Tungsten arc welding process.

(d) State a physical property and a metallurgical problem that must be encountered when joining dissimilar materials by a fusion welding process.

(e) Define the welding arc.

(f) Explain the term weldability.

(g) What is meant by non-consumable electrode ?

(h) State the functions of flux in flux shielded metal arc welding.

(i) _____ flux _____ and gas are used in MIG.

(j) The incline angle of torch and filler metal are generally kept _____ and _____ respectively with the work piece.

2. (a) Describe the various types of residuals stresses in welds. 5

(b) Explain the methods to reduce welding stresses. 5

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3. (a) Explain the purpose of welding joint design. 5

(b) Describe the types of welding joints and their characteristics. 5

4. Explain the types, causes and remedies of various welding defects. 10

5. (a) Explain the welding characteristics of different cast irons. 5

(b) Explain the mass and heat flow in fusion welding with suitable sketches. 5

6. (a) Explain the principles of single carbon and double carbon arc welding. 5

(b) What are the advantages, disadvantages and applications of carbon arc welding ? 5

7. (a) Describe the principle and operation of submerged arc welding process. 5

(b) What are the advantages and disadvantages of submerged arc welding. 5

8. Write short notes on any **two** of the following : 5×2

(a) Fusion welding

(b) Seam welding

(c) MIG

(d) GTAW.

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