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Total Number of Pages: 02

B.Tech
PEMT5404

7th Semester Regular / Back Examination 2016-17

JOINING OF MATERIALS
BRANCH(S): METTA, MME

Time: 3 Hours

Max Marks: 70

Q.CODE: Y223

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

Q1 Answer the following questions: (2 x 10)

- What is self-adjusting arc?
- How does spot resistance welding differ from projection welding?
- Difference between spatter and undercutting of welding.
- State the functions of flux in flux shielded metal arc welding.
- What are the various positions of welding?
- What are the factors to improve the weldability of steel?
- Differentiate between consumable and non-consumable electrodes.
- What are the differences between brazing and braze welding?
- What are the factors to be considered for the selection of joining of materials?
- Why DC straight polarity is preferable in single carbon arc welding?

Q2 a) Write down the different types of gas welding processes. Discuss the advantages and disadvantages of gas welding over resistance welding processes. (5)

b) Describe the chemical reactions involved in oxy-acetylene welding. Explain the types of flame of gas welding process with schematic temperature profile. (5)

Q3 a) Describe the GTAW and GMAW. (5)

b) Explain the factors that are responsible for resistance welding. (5)

Q4 Describe the different welding designs with suitable diagram. (10)

Q5 a) Describe the different types of residual stresses and explain their causes in welding process. (5)

b) Explain the causes and the remedies of different types of welding defects. (5)

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Q6 a) Explain the different zones in a fusion weld joint with schematic illustration. **(5)**

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b) Describe the factors that are considered for welding of cast iron. **(5)**

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Q7 a) What is meant by soldering? Explain how it is different from welding? **(5)**

b) Explain the different types of inspection and testing of weldments. **(5)**

Q8 Write short notes on any two: (5 x 2)

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a) HAZ

b) Welding characteristics of copper alloys.

c) Thermit welding

d) Temperature gradient on weld microstructure.