

17455

15162

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE :

20

- (a) Describe the process of gas welding.
- (b) Draw and explain any two types of joints used in gas welding.
- (c) State and explain any two arc characteristics in arc welding.
- (d) What do you mean by arc stability ? Why is it necessary ?
- (e) Define weldability and give importance of it.
- (f) State any four factors affecting weldability.
- (g) How solidification in welding takes place ? Explain in brief.

2. Attempt any TWO :

16

- (a) What are different gas welding equipments ? Describe applications of torch with neat sketch.
- (b) What are different power source used in manual arc welding ? Explain in detail both A.C. & D.C. sources.
- (c) What are different methods of welding of mild steel ? Describe any one in detail.

- 3. Attempt any TWO : 16**
- (a) State different welding methods used for alloy steels. Describe welding of stainless steel in detail.
 - (b) What do you mean by heat affected zone ? Explain structure of weld metal in it.
 - (c) Compare brazing with soldering (atleast 8 points each).
- 4. Attempt any FOUR : 16**
- (a) What are different gas welding techniques ? Explain any one in brief.
 - (b) State any four advantages of gas welding.
 - (c) State the welding of Aluminium by TIG welding.
 - (d) Explain any one metal transfer mechanism.
 - (e) What are different welding processes used for C.I. welding ?
 - (f) State any four factors affecting selection of power source.
- 5. Attempt any TWO : 16**
- (a) Define following with reference to metal arc welding :
 - (i) Polarity
 - (ii) Current voltage
 - (iii) Electrical travel
 - (iv) arc length
 - (b) State and explain any four effects of welding on properties of metals.
 - (c) What are weld defects ? Why they occur ? Describe any two in detail.
- 6. Attempt any TWO : 16**
- (a) What are various heat treatments used in welding ? Explain any one in detail.
 - (b) What are different filler metals used in brazing ? Explain importance of filler metal in brazing.
 - (c) What is soldering ? State the principle of soldering.
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