Seat No.:	Enrolment No
GUJARAT TEC	CHNOLOGICAL UNIVERSITY
BE - SEMESTER-VI	(NEW) - EXAMINATION – SUMMER 2017
Subject Code: 2162506	Date: 27/04/2017

Subject Name: Metal Joining Technology

Time: 10:30 AM to 01:00 PM Total Marks: 70

Instructions:

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

MARKS

Q.1 Short Questions

14

- 1 Which of the following joint have high corrosion resistance?
 - a. Welding joint
 - b. Riveted joint
 - c. Bolted joint
 - d. None of the above
- 2 Single V and Single U bitt welds are used for sheets of thikness.
 - a. Upto 10mm
 - b. 5-15mm
 - c. 10-20mm
 - d. 15-25mm
- 3 The metals having good weldability, in descending order are.
 - a. Cast steel, iron, carbon steel, cast iron
 - b. Carbon steel, iron, cast steel, cast iron
 - c. Iron, carbon steel, cast steel, cast iron
 - d. Cast iron, iron, carbon steel, cast steel
- 4 Which of the following welding process is used for welding of sheet metals in automobile and air craft industries?
 - a. Shielded metal arc welding
 - b. Gas tungsten arc welding
 - c. Thermit welding
 - d. Resistance welding
- 5 In spot welding, the spacing between two spot welds is
 - a. 4t
 - b. 8t
 - c. 12t
 - d. 16t

Where is't' is thickness of sheet.

- **6** Electric resistance welded(ERP) pipes are manufactured by
 - a. Projection welding
 - b. Seam welding
 - c. Percussion welding
 - d. Flash welding
- 7 Which of the following is not true for gas welding?
 - a. HAZ and distortion are less as compare to arc welding
 - b. It is suitable for thin sheets
 - c. It is slower than arc welding
 - d. There are safety problem in storing and handling the gases.
- **8** Which process is used for repairing of tracks and spokes of driving wheels?

	a. Electroslag weldingb. Plasma arc welding	
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9	• • • • • • • • • • • • • • • • • • • •	
	d. Groove	
10	The welding process used in joining mild steel shanks to high speed drills, is	
	c. Flash butt welding	
	d. Upset butt welding	
11	Thermit, used in thermit welding is a mixture of	
	a. Charcoal and iron oxide	
12		
10		
13		
	c. More	
	d. None of the above	
14	Acetylene gas is stored in cylinders in	
	a. Solid form	
	b. Gaseous form	
	•	
	•	
(a)	· · · · · · · · · · · · · · · · · · ·	03
` ′		04
(c)		07
(c)		07
(0)	sources.	٠.
(a)	Explain the principal operation of gas welding.	03
(b)	Differentiate the high pressure gas welding and low pressure gas welding.	04
(c)	Write short note on gas tungsten arc welding OR	07
(a)	Describe briefly about flame adjustment.	03
(b)	Define soldering and write the stages of soldering process.	04
(c)		07
(a)		03
(b)	<u> </u>	04
(0)	Define following terms. Them, Current, Resistance, Time	U 4
	12 13 14 (a) (b) (c) (c) (a) (b) (c)	b. Plasma are welding c. Thermit welding d. Electron beam welding 9 Which type of weld is further classified by the shape of the area to be filled with the weld? a. Plug b. Slot c. Fillet d. Groove 10 The welding process used in joining mild steel shanks to high speed drills, is a. Spot welding b. Seam welding c. Flash butt welding d. Upset butt welding d. Upset butt welding 11 Thermit, used in thermit welding is a mixture of a. Charcoal and aluminium c. Iron oxide and aluminium d. Charcoal, iron oxide and aluminium d. Charcoal, iron oxide and aluminium 12 Lap joints are employed on plates having thickness. a. Less than 3 mm b. 5 to 10 mm c. 12.5mm d. Above 25 mm 13 In forehand welding, the angle between the welding torch and the work is a. Same b. Less c. More d. None of the above 14 Acetylene gas is stored in cylinders in a. Solid form b. Gaseous form c. Liquid form d. Any one of these (a) Classify the welding process in detail. (b) Compare the welding process with casting and riveting. (c) Write are initiation and are maintenance method used in submerged are welding and manual metal arc welding. OR (c) List the equipment required for arc welding. Explain the arc welding power sources. (a) Explain the principal operation of gas welding. Differentiate the high pressure gas welding and low pressure gas welding. (b) Differentiate the high pressure gas welding and process. OR Describe briefly about flame adjustment b) Define soldering and write the stages of soldering process. Wite short note on gas metal arc welding. List out various welding defect and write remedies and causes for any two welding defect.

	(c)	Explain different stress relieving methods in welding.	07
		OR	
Q.4	(a)	Define crater and how to eliminate crater.	03
	(b)	Define spot welding and write the procedure for spot welding.	04
	(c)	Define welding distortion. Write about the major types of distortion and how to control distortion?	07
Q.5	(a)	Draw following welding symbol: - fillet, double - U butt, double bevel butt, spot, projection and stud.	03
	(b)	Write a short note a HAZ and its characteristics.	04
	(c)	Write short note on thermit welding process.	07
	, ,	OR	
Q.5	(a)	Write brief about coating ingredient of electrode and their function.	03
-	(b)	Define weldability. Write the effect of alloying element on weldability.	04
	(c)	Write short note on atomic hydrogen welding.	07
	(C)	write short note on atomic hydrogen welding.	
