PAPER ID-310431

Subject Code: KME055

Roll No: | | | | | | | | | | | | | |

B. TECH
(SEM-V) THEORY EXAMINATION 2020-21
ADVANCED WELDING

Time: 3 Hours ***Total Marks: 100***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

Qno.	Question	Marks	CO
a.	What is the role of pilot arc in Plasma arc welding?	2	
b.	What do you mean by 'arrest points' in solidification?	2	
c.	What do you understand by weldability?	2	
d.	What are the factors that cause slag inclusion?	2	
e.	Discuss importance of welding.	2	
f.	List different type of brazing techniques available? Explain any one in detail	2	
g.	What is physics of arc welding?	2	
h.	What is a need of classification of welding process?	2	
i.	Write short note on ISO welding classes.	2	
j.	Explain reverse and straight polarity	2	

SECTION B

2. Attempt any *three* of the following:

Qno.	Question	Marks	CO
a.	What are the various Thermal considerations for welding? Also discuss the variation of heating and cooling curves.	10	
b.	Explain type of underwater welding?	10	
c.	Define Schaeffler diagram and its importance?	10	
d.	List down some nondestructive and destructive weld testing methods?	10	
e.	Write name the common causes of health hazard and safety measures in welding process?	10	

SECTION C

3. Attempt any *one* part of the following:

Qno.	Question	Marks	CO
a.	Explain different types of welding power sources its operation characteristics.	10	
b.	A direct current welding machine with a linear power source characteristic provides open circuit voltage of 80 V and short circuit current of 800 A. During welding with the machine, the measured arc current is 500 A corresponding to an arc length of 5.0 mm and the measured arc current is 460 A corresponding to an arc length of 7.0 mm. The linear voltage (E) - arc length (L) characteristic of the welding arc can be given as (where E is in Voit and L is in mm)	10	

4. Attempt any *one* part of the following:

Qno.	Question	Marks	CO
a.	Explain Magnetically impelled arc butt (MIAB) welding in detail. Write its benefits and application?	10	
b.	Explain the principle and working of GTAW welding? Differentiate GMAW &GTAW? What variables affect weld quality of GTAW welding?	10	

5. Attempt any *one* part of the following:

Qno.	Question	Marks	CO
a.	Write short note on (1) welding automation (2) Electro gas and Electroslag Welding	10	
b.	What do you understand by friction welding; write its advantage, disadvantage and application? Differentiate friction welding and inertia welding? List what variables affect weld quality of friction welding?	10	

6. Attempt any *one* part of the following:

Qno.	Question	Marks	CO
a.	What do you mean by metalizing and hard facing? Explain process giving its advantage and applications.	10	
b.	Explain with sketch weld affected zone .What is its significance? How it affects the selection of welding process?	10	

7. Attempt any *one* part of the following:

Qno.	Question	Marks	CO
a.	What are the methods used for measuring the stresses in weld structure? Explain any one of them.	10	
b.	Write short note on (1) Welding of Dissimilar Materials (2) Effects of alloying elements on weldability	10	