**BBDNITM**

**MECHANICAL DEPARTMENT**

**SESSION (2018-19)**

**Subject-Manufacturing Science & Technology-II [RME-503]**

**Assignment no. 4**

1) Explain with neat sketch the working and applications of the following: (i) Coated and uncoated electrode welding (ii) Atomic hydrogen welding

2) Describe the submerged arc welding process with the help of a suitable diagram. What are the advantages and applications of this process?

3) Compare electro-slag welding process with that of submerged arc welding from standpoint of heat liberated, joint preparation and welding position.

4) Describe the oxy-acetylene welding equipments. Draw the different types of flames used in gas welding. How would you identify these flames? What are the specific uses of each of these flames?

5) Briefly describes the main feature of resistance welding. What are different types of resistance welding?

6) Differentiate between TIG and MIG process with conventional welding process.

7) Discuss application and working principle of Diffusion welding and Explosive welding

8) Name any ten welding defects and what are remedies of that?

9) Define weld ability. Explain in brief the electric arc welding and different equipment used in electric arc welding. Also explain its advantages and disadvantages.

10) What is the principle of gas welding? Explain different types of Oxyacetylene flames.

11) Write short notes on any two of the following: (i) Soldering (ii) Brazing (iii) Adhesive bonding

12) In an arc welding process, the voltage and current are 25 V and 300 A respectively. The arc heat transfer efficiency is 0.85 and welding speed is 8 mm/sec. The net heat input (in J/mm) is

13) In arc welding of a butt joint, the welding speed is to be selected such that highest cooling rate is achieved. Melting efficiency and heat transfer efficiency are 0.5 and 0.7 respectively. the area of the weld cross-section is 5 mm\*mm and the unit energy required to melt the metal is 10 j/mm^3, If the welding power is 2 kW, the welding speed in mm/s is closest to.

14) 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 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 volt and L is in mm)