BEIYEAR

Class Test: II,

MERIC3: Elements of Mechanical Engineering Section: "CS-A"& "CS-B" (Date: 10/01/2023)

Duration: 70 Min.

Max. Marks: 20

Note: All questions are compulsory USE OF STEAM TABLE IS PERMITTED. Sketch I suitable diagram wherever if necessary.

Q. Explain critical point and triple point for water with the help of phase equilibrium diagram.

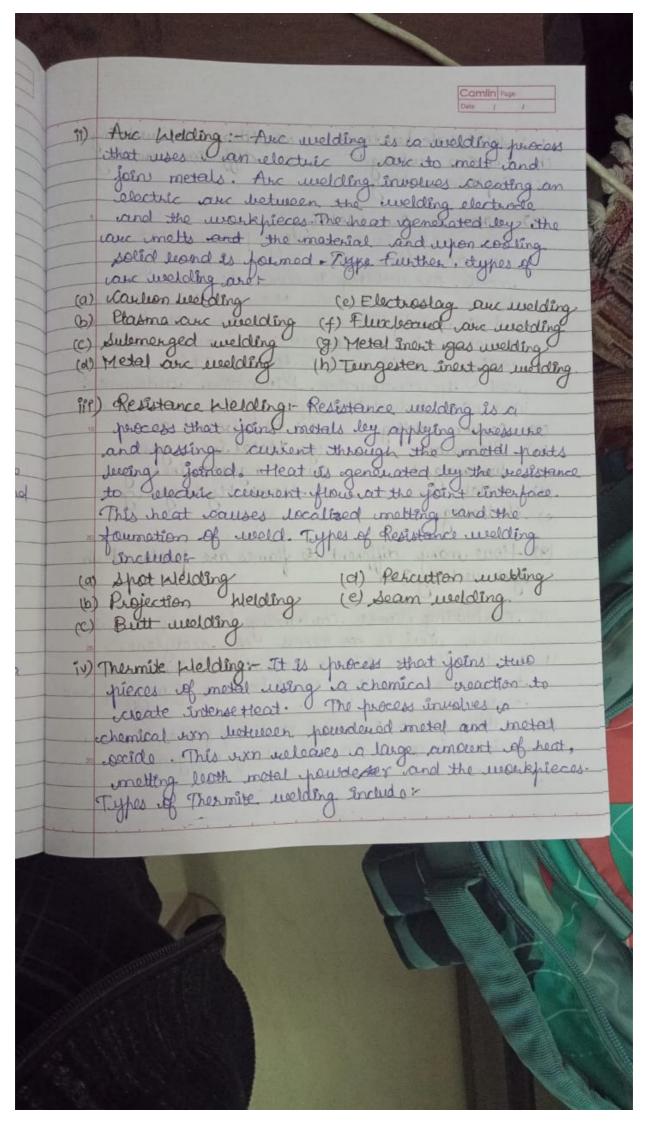
Q.3 A pressure cooker contains 2 kg of steam at 5 bar pressure and 0.9 dryness fraction. Calculate the quantity of heat which must be transferred so that quality of steam becomes 60% dry. Also calculate the pressure and temperature of steam that exists in cooker after heat rejection 6

Q.4 Explain briefly the types of oxy acetylene gas welding

(5)

(b) fonge Melding (a) Gas Kledding, 0 the application of pressure along with the use of the stune of pressure along with the waternal obten along with heat, to cheate in I sold industry. Biffer and defens of medding? · Classification

2) Fuston Non-Bressure Helding: Fusion welding which the materials being joined are molted to create a fusion or molten pool Once the mother pool soll bliffes, a istrong to is formed between the weekded materials Common types of fusion wedding includer (a) Gas welding (b) Arc Welding (C) Thermite helding (3) cold Welding: cold recolding is a solid state welding process in which I two unaterials care Joined stagether at on mean moon temperature, welthout the need for metting de applying ordernal heat. This process relie con the phinapal that when clean amoval surface come Entimate contact in interenment, they can together through sharing of electrons. Donmon (a) Butt and lap joints includes (7) Different types of welding (1) Gas kielding: Gas welding typically refers to vary acetylone welding, in process that use mothere of oxygen and aretylone gases & to produce a flame for welding. commonly we goe cutting, weelding, two I becaring and heating motals. I gas wolding is further iclassified as (a) Oscyaretylene Welding (c) Oscyhydriogen Weldi (b) Airacetylene plelding



(a) Solid state welding (d) Illtrasone welding (b) Friction welding (C) Explasive melding (e) diffusion welder (8) What is Aux Welding? Are welding is a welding peocass that uses an electric auc to mell and join emotals. Are welding involves creating electric are deturoen the weekding electrole and the weekpiece. The heat generated by the arc metts the a material and upon cooling a solld bond is found. It is beliebly used an construction, followication, wuntermother land other industries. Types of Arc Welding are: (a) Carling (f) Fluxboard and (b) Plasma arc (g) Metal incut gas (b) Jundemerged (b) Tungesten inert gas rd) unetal suc (9)-Atomic Hydrogen gas: re) electroslag (9) How many different to flames are perduced in (a) Carleizing flames carburing flame is one in which there is on occess of acotylene. 16) Mentral flames - AIt is well defined inner come toui works consisting equal balance of oxygen and excetylene. (c) Oxidering flame: An Daya Driditing flame is one in which there is an excess of saygen.