

Enrollment No: \_\_\_\_\_ Exam Seat No: \_\_\_\_\_

# C.U.SHAH UNIVERSITY

## Summer Examination-2018

**Subject Name :** Manufacturing Processes – II

**Subject Code :** 4TE05MPR1

**Branch:** B.Tech (Automobile, Mechanical)

**Semester :** 5

**Date :** 03/04/2018

**Time :** 10:30 To 01:30

**Marks :** 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

**Q-1**

**Attempt the following questions:**

**(14)**

- a) Distortion allowance is not provided in the following shape of casting.  
i). U            ii). T            iii). C            iv).O
- b) The plastic region of the stress-strain curve for a metal is characterized by a proportional relationship between stress and strain: (i) true or (ii) false?
- c) In three boxes moulding the middle box is known as  
i). cope            ii). drag            iii). cheek            iv). flange
- d) Cast iron is a ferrous alloy with up to 2% carbon: (i) true, (ii) false.
- e) Ornaments, toys and statue of low melting alloys are made by which of the following method?  
i). Permanent mould casting            ii). Semi permanent mould casting            iii). Slush casting            iv). Die casting
- f) The temperature at which the new grains are formed in the metal is called  
i). Lower critical temperature ii). Upper critical temperature iii). Eutectic temperature  
iv). Recrystallisation temperature.
- g) Petrol engine cylinder are made by  
i). Shell moulding            ii). Plaster mould casting            iii). Investment casting  
iv). Centrifugal casting
- h) Of the three polymer types, which one is the most important commercially?  
i) thermoplastics ii) thermosets            iii) elastomers.
- i) Which of the following processes are generally limited to thermoplastic polymers (more than one)? i) blow molding            ii)compression molding            III) reaction injection molding  
iv)thermoforming            v)transfer molding            vi) wire coating.
- j) The metals having good weldability, in descending order are  
i). cast steel, iron, carbon steel, cast iron            ii). carbon steel, iron, cast steel, cast iron  
iii). iron, carbon steel, cast steel, cast iron            iv). cast iron, iron, carbon steel, cast steel
- k) Which of the following welding process is used for welding of sheet metals in automobile and air craft industries? i) Shield metal arc welding            ii) Gas tungsten arc welding            iii) Thermit welding            iv) Resistance welding.
- l) Heat is created by chemical reaction in  
i). Resistance welding            ii). Oxy-acetylene welding            iii). Tungsten arc welding  
iv). Thermit welding
- m) In a hot chamber die casting machine (i) Melting pot is separate from the machine  
(ii) Melting pot is an integral part of the machine (iii) Melting pot may have any location  
(iv) there is no need for melting pot.
- n) Tubes for shaving cream and tooth paste are made by



i). forward extrusion  
iv). all of the above

ii). backward extrusion

iii). impact extrusion

**Attempt any four questions from Q-2 to Q-8**

- Q-2            Attempt all questions**
- a) Write a short note on nanoscale manufacturing with suitable example. **07**  
b) Define Master pattern. How size of Master pattern is represented mathematically? **07**
- Q-3            Attempt all questions**
- a) Describe carbon dioxide moulding representing the chemical reaction of the moulding. **07**  
b) What is a riser? What is meant by the term “risering”? Discuss with examples. **07**
- Q-4            Attempt all questions**
- a) What is Cupola? How is the Thermal efficiency of a Cupola determined? **07**  
b) Describe with neat sketch: a) Orbital forging b) Rotary swaying **07**
- Q-5            Attempt all questions**
- a) Describe the working of pressure regulators in welding **07**  
b) Describe the CO<sub>2</sub> MIG welding method with its advantages, disadvantages & applications. **07**
- Q-6            Attempt all questions**
- a) Describe the process of hot extrusion of tubes. **07**  
b) What are the principles of operation of resistance welding? Describe its types. **07**
- Q-7            Attempt all questions**
- a) What are foamed plastics? How foaming is done? Describe. **07**  
b) What is the function of padding & chills? State their effects. **07**
- Q-8            Attempt all questions**
- a) Explain the LIGA micro fabrication process. **07**  
b) Write a technical note on micromachining of MEMS devices. **07**

