



Printed Pages : 4

EME – 101 / EME – 201

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 4304

Roll No.

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B. Tech.

(SEM. II) EXAMINATION, 2008-09

MANUFACTURING PROCESSES

Time : 2 Hours]

[Total Marks : 50

Note : Be Precise and scientific in writing.

SECTION - A

Attempt all the questions :

10×1=10

- 1 This section contains 10 questions (true/false, objective/ fill in the blanks types). Choose/Fill the correct answer :
- (1) The castability of Al is very poor. (True/False)
 - (2) The machinability of Nickel and Steel is good. (True/False)
 - (3) Hot working is carried out below the recrystallization temperature. (True/False)
 - (4) Name the **two** defects in metal formed product.
 - (5) Fatigue failure occurs when a part is subjected to (i) compressive stress (ii) tensile stress (iii) fluctuating stresses, (iv) uniform stress.



(6) Press working of metal is a (i) Machining process
(ii) Welding process (iii) Joining process (iv) Metal forming process.

(7) Core is used to produce _____ in casting.

(8) Allowance provided on surfaces parallel to direction of withdrawn in casting is known _____.

(9) In compound rest method of taper turning, compound rest is swilled by the angle :

(i) $\tan \alpha = \frac{d_1 - d_2}{l}$

(ii) $\tan \alpha = \frac{d_1 - d_2}{2l}$

(iii) $\tan \alpha = L \times \frac{d_1 - d_2}{l}$

(iv) $\tan \alpha = \frac{d_1 - d_2}{2}$

(10) Match the following :

- | | |
|-------------------------|-------------|
| (i) Hard wood | (a) Glass |
| (ii) Ceramic | (b) Deodar |
| (iii) Soft wood | (c) Shisham |
| (iv) Composite material | (d) Tufnol |



SECTION - B

Attempt any three questions. All questions carry equal marks :

3×5=15

- 2 (a) Explain the following terms :
- (i) Strength
 - (ii) Toughness
 - (iii) Fatigue
 - (iv) Malleability.
- (b) Classify the carbon steel based on the percentage of carbon as low, mild, medium and high carbon steel. Write their properties and applications.
- (c) Explain with neat sketch, the basic working principle of extrusion. Describe its applications in industry. Name the four extruded products.
- (d) With help of neat sketch, explain the basic components of shaper machine and various operations performed on it.
- (e) With the help of neat sketch, define the following operations :
- (i) Forging
 - (ii) Rolling
 - (iii) Taper turning
 - (iv) Galvanizing.



SECTION - C

Attempt any three questions. Each question carries equal marks. $5 \times 5 = 25$

- 3 Why heat treatment of carbon steel is required ? Give the elementary idea of various annealing operations.
- 4 Differentiate between hot and cold working of metals. Classify the metal forming operations and mention their specific applications.
- 5 Why the pattern is different from casting ? Describe with neat sketch, the design steps in casting process. What is the function of core in casting ?
- 6 With the help of schematic sketch, describe the basic working principle of milling machine. Differentiate between up milling and down milling.
- 7 How will you classify the welding processes ? Explain with suitable applications, the working principle of resistance welding.
- 8 Discuss the role and importance of materials and manufacturing for the growth of any nation. Explain with suitable examples, the types of production.

