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EME-101

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

PAPER ID : 4302

Roll No.

B. Tech.

(Only for the candidates admitted/Readmitted in the session 2008-09)

(SEM. I) EXAMINATION, 2008-09 MANUFACTURING PROCESSES

Time : 2 Hours]

[Total Marks : 50

Note : Be precise and scientific in writing.

SECTION - A

Attempt **all** the questions :

- 1 This section - contains 10 questions. (objective/fill in the blanks types). Choose/Fill the correct answer.
- (a) Manufacturing is the process of converting raw material into _____
 - (b) The ductility of a piece of chalk is _____
 - (c) The % of carbon in medium carbon steel varies
 - (i) Less than 0.20
 - (ii) 0.10 to 0.30
 - (iii) 0.30 to 0.60
 - (iv) More than 0.60.
 - (d) Stainless steel comes under the category of
 - (i) Non ferrous metal and alloy
 - (ii) Ferrous metal and alloy
 - (iii) Polymer
 - (iv) Composite



- (e) Bronze is an alloy of
- Aluminium and zinc
 - Aluminium and nickel
 - Copper and tin
 - Copper and zinc
- (f) Forging of metal is a
- Machining process
 - Welding process
 - Joining process
 - Metal Forming Process.
- (g) Metal forming is the process in which
- Removal of metal takes place.
 - Shaping of Metal by forces applied through various dies and tools.
 - Some additional materials are joined to the raw material.
 - Material addition, through melting and pouring.
- (h) Blow holes are the common defects found in
- welding
 - machining
 - forming
 - casting
- (i) Finishing is the operation best done by
- Milling machine
 - Shaper machine
 - Planar machine
 - Grinding
- (j) Swing is the one of specifications of
- lathe machine
 - shaper machine
 - drilling machine
 - grinding machine



SECTION - B

- 2 Attempt any **three** questions. All questions carry **equal** marks:
- (a) Explain the following terms :
 - (i) Ductility
 - (ii) Stiffness
 - (iii) Brittleness
 - (iv) Fatigue
 - (v) Malleability
 - (b) Draw rough sketch of the stress strain diagrams of
 - (i) ductile material and
 - (ii) Brittle materialBriefly explain, what do you understand by Toughness.
 - (c) Explain
 - (i) Mould and
 - (ii) Pattern.Describe the two important pattern allowances.
 - (d) With the help of sketch, explain the basic components of lathe machine and various operations performed on it.
 - (e) With the help of sketch, define the following operations
 - (i) Forging
 - (ii) Rolling
 - (iii) Drawing
 - (iv) Extrusion.

SECTION - C

Note : Attempt any **four** questions. All questions carry **equal** marks.

- 3 Answer any **one** part of the following:
- (a) Based on % of carbon, classify carbon steels. How do stainless steel become stainless?
 - (b) What are the major uses of copper? What are the alloying elements in brass and bronze, respectively and also write its uses.



- 4 Answer any **one** part of the following :
- (a) Differentiate between hot and cold working of metals. Bring out the advantages and disadvantages of each of these techniques. Explain with neat sketch the rolling of steel bar.
 - (b) Define the following terms with sketch as used in sand casting:
 - (i) Core
 - (ii) Core-Prints
 - (iii) Sprue
 - (iv) Runner
 - (v) Riser
- 5 Answer any **one** part of the following :
- (a) With the help of schematic sketch, describe the basic working principle and important parts of shaper machine. Also describe the difference in operation between shaper and planer.
 - (b) Explain fusion as it relates to welding operations. How will you classify the welding processes? Explain the features of neutral, reducing, and oxidizing flames.
- 6 Answer any **one** part of the following :
- (a) Discuss the role and importance of materials and manufacturing for the growth of any nation. Explain the production and productivity.
 - (b) Explain briefly the following with suitable examples :
 - (i) Electroplating
 - (ii) Galvanizing
 - (iii) Plant layout
 - (iv) Ceramics.

