Printed Pages—4 **EME101**

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

PAPER ID : 4302 **Roll No.** | | | | | | | | | | |

B. Tech.

(SEM. I) ODD SEMESTER THEORY EXAMINATION

2010-11

MANUFACTURING PROCESSES

Time : 2 Hours *Total Marks : 50*

SECTION—A **(10×1=10)**

1. Attempt **all** questions. All questions carry equal marks.

(A) Non-metallic elements which are basically the oxides and compounds of metal and non-metals are known as :

(a) Composite
(b) Organic Polymers
(c) Ceramics
(d) Ores

(B) Puddling furnace is lined inside with _____.

(C) Which coolant has highest cooling rate in heat treatment process ?

(a) Water
(b) Sulphuric Acid
(c) Air
(d) Brine

(D) The sheetmetal operation in which metal is removed in small increments :

(a) Perforating
(b) Punching
(c) Lancing
(d) Nibbling

(E) In casting process, inclusions are :

(a) Steel particles

(b) Metallic particles

(c) Iron particles

(d) Non Metallic particles

(F) Reaming operation is performed to :

(a) Enlarge a previously drilled hole

(b) Finish previously drilled hole to accurate size

(c) Both (a) and (b)

(d) None of the above

(G) In resistance welding the time period during which current flows to rise the temperature is :

(a) weld time

(b) on time

(c) off time

(d) squeeze time

(H) In carburizing flame the maximum temperature produced is :

(a) about 3200°C

(b) about 3500°C

(c) about 3000°C

(d) None of the above

(I) Inorganic non-metallic material which are used at very high temperature :

(a) Cement

(b) Rubber

(c) Thermosetting plastic

(d) Ceramic

(J) Combination layout combines the features of :

(a) Product and process layout

(b) Jobshop and process layout

(c) Jobshop and product layout

(d) Fixed position and process layout

SECTION—B (3×5=15)

2. Attempt any **three** questions. All questions carry equal marks.

(A) Explain the following :

(i) Ductile fracture

(ii) Brittle fracture

(iii) Creep fracture

(iv) Fatigue fracture.

(B) Explain different properties of moulding sand.

(C) What is the principle of gas welding ? Explain different types of oxyacetylene flames.

(D) What are the objectives of plant layout ? Explain different types of layout with their advantages and disadvantages.

(E) Explain the working principle and operation of a Milling machine with neat diagram.

SECTION—C

3. Attempt any **two** parts : (2×5=10)

(A) Classify steel on the basis of carbon percentage. Also write properties and uses of them.

(B) What do you mean by case-hardening ? Explain different method of case hardening in detail.

(C) Differentiate Cast Iron on the basis of percentage of carbon. Explain with neat diagram the construction and working of cupola furnace.

4. Attempt any **two** parts : **(2×7·5=15)**

(A) Define weldability. Explain in brief the electric arc welding and different equipment used in electric arc welding. Also explain its advantages and disadvantages.

(B) Write short notes on any **three** of the following :

(i) Soldering

(ii) Brazing

(iii) Centrifugal casting

(iv) Die casting process.

(C) With the help of schematic diagram, describe the basic working principle and important parts of drilling machine. Also describe drilling operations.