

**DIPLOMA IN
MECHANICAL ENGINEERING (DME)**

Term-End Examination

December, 2012

00921

BME-051 : MANUFACTURING PROCESSES – I

Time : 3 Hours

Maximum Marks : 70

Note : Question No.1 is compulsory. Attempt five questions from remaining questions. Your answers should be in English or in Hindi

1. Choose correct alternative and write the correct alternative only in your answer book : **10x2=20**
- (a) Sands are graded according to their :
- (i) Source of origin
 - (ii) Strength
 - (iii) Permeability
 - (iv) Clay content and grain size
 - (v) Moisture
- (b) Riddle is :
- (i) a round sieve
 - (ii) a long, flat metal plate fitted with an offset handle.
 - (iii) used to make or repair corners in a mould
 - (iv) Used to scoop sand deep in the mould
 - (v) none of the above

- (c) The purpose of chaplets is :
- (i) just like chills to ensure directional solidification
 - (ii) to provide efficient venting
 - (iii) to support the cores
 - (iv) lower and upper parts of the moulding box
 - (v) to compress moulding sand
- (d) For mounting several patterns at a time, following type of pattern is used :
- (i) Combined pattern
 - (ii) Loose piece pattern
 - (iii) Sweep pattern
 - (iv) Match plate pattern
 - (v) Metallic pattern
- (e) Cores are used to :
- (i) make desired recess in castings
 - (ii) strengthen moulding sand
 - (iii) support loose pieces
 - (iv) remove pattern easily
 - (v) none of the above

- (f) The purpose of gate is to :
- (i) feed the casting at a rate consistent with the rate of solidification
 - (ii) act as reservoir for molten metal
 - (iii) help feed the casting until all solidification takes place.
 - (iv) feed molten metal from pouring basin to gate
 - (v) none of the above
- (g) Lathe bed is usually made of :
- (i) structural steel
 - (ii) stainless steel
 - (iii) cast iron
 - (iv) mild steel
 - (v) non-ferrous materials
- (h) Quick return mechanism is used in :
- (i) milling machine
 - (ii) broaching machine
 - (iii) grinding machine
 - (iv) slotter
 - (v) welding machine
- (i) Large jobs on shaper are held with the help of :
- (i) vise
 - (ii) clamps and T-bolts
 - (iii) magnetic vice
 - (iv) clamps, bolts and squares
 - (v) on floor directly

(j) The cutting tool in a milling machine is mounted on :

- (i) tool holder
- (ii) arbor
- (iii) spindle
- (iv) column
- (v) table

2. (a) How is power transmitted from lathe spindle to : 5+5

- (i) feed shaft
- (ii) lead screw

(b) How is lathe specified ? List any four parts of a lathe.

3. (a) Describe the functions of knee, column and saddle in a milling machine. 6+4

(b) What operations can be done on a milling machine ?

4. (a) Describe various feed movement in a slotting machine. 4+6

(b) Describe the main parts of a slotting machine. Describe atleast three of them.

5. (a) What is the fundamental difference between a planner and a shaper ? List different types of planners. 5+5
- (b) List and describe in brief the main parts of a planner.
6. (a) How shapers are classified ? Describe in brief. 5+5
- (b) Differentiate between a shaper tool and a lathe tool.
7. (a) Describe different operations performed on vertical boring machine. 5+5
- (b) List and describe in brief different parts of radial drilling machine.
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