

**DIPLOMA IN MECHANICAL ENGINEERING
(DME)**

Term-End Examination

00142

December, 2017

BME-051 : MANUFACTURING PROCESSES - I

Time : 2 hours

Maximum Marks : 70

Note : Question no. 1 is compulsory. Attempt any four questions from the remaining questions.

1. Choose the correct alternative and write it in your answer-book. $7 \times 2 = 14$
- (a) Enlarging an existing circular hole with a rotating single point tool is called
- (i) Boring
 - (ii) Reaming
 - (iii) Drilling
 - (iv) Internal turning
- (b) Which of the following processes use a single point cutting tool ?
- (i) Drilling
 - (ii) Milling
 - (iii) Turning
 - (iv) Grinding

- (c) Feed in shaping and planing is expressed in
- (i) mm/stroke
 - (ii) mm/rev
 - (iii) mm/tooth
 - (iv) All of the above
- (d) The type of quick return mechanism employed mostly in shaping machines is
- (i) Reversible motor
 - (ii) Gear mechanism
 - (iii) Fast and loose pulley
 - (iv) Slotted link mechanism
- (e) In machine moulding, which type of pattern is preferable for mass production ?
- (i) Two-piece pattern
 - (ii) Match-plate pattern
 - (iii) Loose-piece pattern
 - (iv) Left hand-right hand pattern
- (f) Chills are used in casting moulds to
- (i) Achieve directional solidification
 - (ii) Reduce possibility of blowholes
 - (iii) Reduce the freezing time
 - (iv) Increase the smoothness of cast-surface



- (g) The design of a riser is based on
- (i) Bernoulli's theorem
 - (ii) Continuity equation
 - (iii) Chvorinov's rule
 - (iv) Viscosity law
2. (a) Sketch and explain the various methods of turning a taper workpiece. 7
- (b) Discuss the difference between the live and dead centres in a lathe machine. 7
3. (a) Draw the block diagram of a horizontal shaper and write its important parts. 7
- (b) Write the advantages of hydraulic drive over mechanical drive in a shaper. 7
4. (a) Discuss the common work-holding devices used in shapers, slotters and planers. 7
- (b) Write the industrial applications of shapers and planers. 7
5. (a) With the help of a sketch, discuss the main parts and their functions, of a twist drill. 7
- (b) Name the different types of drilling machines. Sketch and describe any one of them. 7

6. (a) Sketch and describe a plain column and knee type milling machine. 7
- (b) What is the difference between face milling and end milling ? Briefly explain. 7
7. Write short notes on any *two* of the following : $2 \times 7 = 14$
- (a) Gang Milling
- (b) Boring Operations
- (c) Pattern Materials
- (d) Advantages of Castings
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