DIPLOMA IN MECHANICAL ENGINEERING (DME)

Term-End Examination

00907

June, 2013

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 Hindi.*

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1. Select correct alternative and write the correct alternative only in your answer book : **10x2=20**

(a) In sand moulding the bottom most part of the flask is called :

(i) cope

(ii) cheek

(iii) drag

(iv) flask bottom

(v) none of the above

(b) Cope in foundry practice refers to :

(i) bottom half of moulding box

(ii) top half of moulding box

(iii) middle portion of the moulding box

(iv) coating on the mould face

(v) heavy weight kept on moulding box to over come buoyant effect of molten metal.

(c) Which of the following is not a casting defect ?

(i) hot tear

(ii) blow holes

(iii) scab

(iv) decarburisation

(v) shift

(d) Drills are usually made of :

(i) plain high - carbon tool steel

(ii) high speed steel

(iii) alloy steel

(iv) cast alloys

(v) tungsten carbide

(e) An over size hole will be produced in drilling if :

(i) feed rate is very high

(ii) cutting speed is too low

(iii) lips of drill are of unequal length

(iv) unsufficient coolant is used

(v) drill is not properly fixed

(f) High speed steel tools compared to carbon steel tools operate at :

(i) same speed

(ii) 2 - 3 times higher speed

(iii) 2 - 3 times lower speed

(iv) 3 - 5 times higher speed

(v) 5 - 8 times higher speed

(g) In gang milling :

(i) several jobs can be performed in one set up

(ii) one job is completed on several milling machines located together

(iii) two or more cutters are mounted on the arbor and all of them remove the metal simultaneously

(iv) all of the above

(v) none of the above

(h) Feed rate in milling operation is expressed as :

(i) mm/tooth

(ii) mm/r.p.m of the milling cutter

(iii) metres/minute

(iv) revolution per minute

(v) mm

(i) A universal dividing head is used to perform a milling operation by :

(i) plain indexing

(ii) direct indexing

(iii) differential indexing

(iv) compound indexing

(v) complex indexing

(j) Which of the following is not the part of a shaper ?

(i) clapper box

(ii) ram

(iii) table

(iv) tool head

(v) cross slide

2. (a) Describe in brief the operations that can be performed on a drilling machine. 5+5

(b) What are the different types of any one type of drilling machine ?

3. (a) How a size of horizontal boring machine is specified ? 5+5

(b) What are the various operations which can be performed on shaper ?

4. (a) Define Machining time, depth of cut, feed and cutting speed for shaper. 4+6

(b) Describe various types of slotters in brief. How a slotter is specified ?

5. (a) Describe various slotting tools and slotter operations. 5+5

(b) List at least five differences between a planer and a shaper.

6. (a) Describe the various methods of supporting an arbor in a milling machine spindle. 5+5

(b) Differentiate between the motions of the cross slide and the compound rest.

7. (a) Describe the necessary steps in sand moulding. 4+6

(b) What is the main function of a Lathe ? List various types of Lathes.