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ME 181402

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BINA CHOWDHURY CENTRAL LIBRARY
(GIMT & GIPS)

2023

Azara, Hatkhwapara
Guwahati - 781017

B.Tech. 4th Semester End-Term Examination

WORKSHOP THEORY AND PRACTICE - I

(New Regulation (w.e.f 2017-18) & New Syllabus (w.e.f 2018-19))

Full Marks - 70

Time - Three hours

The figures in the margin indicate full marks for the questions.

Answer Question No. 1 and any *four* from the rest.

1. Choose the correct solution : (10 × 1 = 10)

(i) When a hole or cavity to be cored is not in line with the parting surface, then a _____ is used

(a) Horizontal core (b) Vertical Core

(c) Drop Core (d) Balanced Core

(ii) A taper provided on the pattern for its easy and clean withdrawal from the mould is known as

(a) Shrinkage allowance (b) Machining allowance

(c) Draft allowance (d) Distortion allowance

(iii) The purpose of a gate is to

(a) Delivers molten metal into the mould cavity

(b) Act as a reservoir for the molten metal

(c) Feed the molten metal to the casting in order to compensate for the shrinkage

(d) Delivers molten metal from pouring basin to gate

[Turn over

- (iv) Which of the following grinding wheel will have very fine grain size?
- (a) A 46 K 5B 17 (b) C 600 K 15 B 11
(c) C 300 K 10 B 18 (d) A 80 K 8 B 12
- (v) Which of the following is a surface finishing operation?
- (a) Drilling (b) Honning
(c) Milling (d) Turning
- (vi) Which milling process the cutting is done on the end of the cutter as well as periphery?
- (a) Plain or slab milling (b) Side milling
(c) Face milling (d) End milling
- (vii) Rotary table is used on milling machine to achieve
- (a) Longitudinal movement
(b) Cross movement
(c) Combination of longitudinal and cross movements
(d) Combination of longitudinal, cross and vertical movements
- (viii) The rate of feed in drilling depends upon?
- (a) Finish required (b) Material of tool (drill)
(c) Material to be drilled (d) All of the above
- (ix) Internal keyway in gears can be cut in
- (a) Shaping machine (b) Planning machine
(c) Slotting machine (d) Lathe machine
- (x) Traversing of tool parallel to the axis of job is termed as _____
- (a) Cross feed
(b) Longitudinal feed
(c) Both cross feed and traversing feed
(d) Both cross feed and longitudinal feed
2. (a) Define: Pattern, Mould and Cast. (3)
(b) What is meant by sand binder? Name the types of sand binder. (3)
(c) Differentiation between Green sand mould and Dry sand mould. (4)
(d) What is a pattern? List any four types of patterns used in foundry. (5)

3. (a) At what speed a 15 mm dia. Drill will run, to drill a hole through a brass plate 20 mm thick, in order to cut the material at a surface speed of 60 m.p.m. Also calculate the feed used, per rev. (4)
- (b) Explain twist drill with a neat sketch and show various parts. (5)
- (c) Explain any three operations performed on drilling machine. (6)
4. (a) Define the terms: cutting speed, feed rate, depth of cut. (3)
- (b) Discuss the method adopted for taper turning by setting over tailstock. (4)
- (c) Discuss the different parts of the lathe machine. (8)
5. (a) Explain the working principle and construction of a shaper machine. (10)
- (b) Differentiate between planner and shaper machine. (5)
6. (a) Define the following elements of milling cutter: fillet, cutting edge, land. (3)
- (b) Discuss how up-milling is different from down-milling. (4)
- (c) What is end milling? How is it different from face milling? (4)
- (d) Differential indexing for 119 divisions. (4)
7. (a) Enlist the factors for the selection of a grinding wheel. (3)
- (b) A grinding wheel is designated as follows: Designate the different parameters represented by the above code. (4)
- (c) What are the defects encountered during grinding? How these defects are overcomeed? (4)
- (d) Discuss the method of honning process as used in surface finishing. (4)

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