



(3 Hours)

[Total Marks : 80]

- N.B. (1) Question no. 1 is compulsory.
 (2) Attempt any **three** questions out of remaining **five** questions.
 (3) **Illustrate** your answer with **necessary** sketch wherever **necessary**.
 (4) **Figures** to the **right** indicate full marks.

1. Attempt any **FOUR** of the following : (20)
- Write short note on Honning Machine.
 - What are the features of a horizontal CNC machine?
 - Explain what is a tool dynamometer with a neat sketch.
 - State the factors for selection of grinding wheel.
 - Explain the steps for designing the broach tools.
2. (a) How is gear manufactured? and also explain the limitations of the different processes. (10)
- Draw and explain the different terms of a twist drill. (6)
 - Write in brief about tool signature. (4)
3. (a) In an orthogonal cutting, the following observations were made, (10)
 Rake angle = 10° , Cutting speed = 50 m/min, chip thickness = 0.4mm, uncut chip thickness = 0.148 mm, depth of cut = 2mm, cutting force = 1500N, Thrust force = 1000N. Calculate (i) chip reduction coefficient, (ii) shear angle (iii) shear force (iv) force normal to the shear plane (v) frictional force (vi) normal to frictional force (vii) shear stress (viii) shear strain (ix) coefficient of friction (x) resultant force.
- Explain the mechanism of chip formation. (6)
 - Explain orthogonal rake system in detail. (4)
4. (a) What are the functions of cutting fluid? Explain different types of cutting fluid. (10)
- In an orthogonal cutting, the following observations were made, (6)
 Rake angle = 10° , Cutting speed = 50 m/min, chip thickness = 0.4mm, uncut chip thickness = 0.148 mm, depth of cut = 2mm, cutting force = 1500N, Thrust force = 1000N. Calculate (i) chip reduction coefficient, (ii) shear angle (iii) shear force (iv) force normal to the shear plane (v) frictional force (vi) normal to frictional force (vii) shear stress (viii) shear strain (ix) coefficient of friction (x) resultant force.
 - Write notes on single point cutting tools. (4)
5. (a) State various machining centers. Describe any one in detail. (10)
- Explain NC, CNC and DNC machine with block diagram. (6)
 - Explain automatic tool changer. (4)

6. Write short notes on any **FOUR** :

(20)

- (a) Machinability.
- (b) Type of coolants.
- (c) Geometry of milling cutter.
- (d) Carbide inserts.
- (e) GM codes in CNC machines.

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Subject: Correction in Q.P Code : 50603 ,PRODUCTION PROCESSES-II

From: University of Mumbai<support@muapps.in> on Tue, 29 May 2018 15:12:43

To: <exam_kgce2010@rediffmail.com>



University of Mumbai

Correction in **Program Code : T1824 - S.E.(MECHANICAL Engg)(SEM IV) (CBSGS)(REV-2012) / T1021 - PRODUCTION PROCESSES-II**
and **T0524 - S.E.(AUTOMOBILE Engg)(SEM IV) (CBSGS)(REV-2012) / T1021 - PRODUCTION PROCESSES-II Q.P Code : 50603**

Read As,

Q. 4 b In an orthogonal cutting, the following observations were made,

Rake angle = 10° , **Cutting speed = 60 m/min**, chip thickness = 0.4mm, uncut chip thickness = 0.148 mm, depth of cut = 2mm, **cutting force = 2000N, Thrust force =1250N.**

Instead of

Q. 4 b In an orthogonal cutting, the following observations were made,

Rake angle = 10° , Cutting speed = 50 m/min, chip thickness = 0.4mm, uncut chip thickness = 0.148 mm, depth of cut = 2mm, cutting force = 1500N, Thrust force =1000N

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