



RN-6867

B. E. III (Sem. V) (Mech.) Examination

May / June - 2010

Mechanical Technology - II

Time : Hours]

[Total Marks : 100

Instructions :

(1)

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| नीचे दशावलि निशानीवाणी विगतो उत्तरवडी पर अवश्य दभवी. Fillup strictly the details of signs on your answer book. | Seat No. : |
| Name of the Examination : | <input type="text"/> |
| <input type="text" value="B. E. 3 (Sem. 5) (Mech.)"/> | <input type="text"/> |
| Name of the Subject : | <input type="text"/> |
| <input type="text" value="Mechanical Technology - 2"/> | <input type="text"/> |
| Subject Code No. : <input type="text" value="6"/> <input type="text" value="8"/> <input type="text" value="6"/> <input type="text" value="7"/> | <input type="text"/> |
| Section No. (1, 2,.....) : <input type="text" value="Nil"/> | <input type="text"/> |
| | Student's Signature |

- (2) Attempt all questions.
- (3) Assume any data if necessary, give reason.
- (4) Answer to the **two** sections must be written in **separate** answer books.
- (5) Draw neat sketch whenever **necessary**.

SECTION - I

- 1 (a) Answer the following questions : 10
 - (i) Name any four cutting fluid.
 - (ii) What is gang drilling?
 - (iii) What is a steady rest?
 - (iv) What is a negative rack?
 - (v) What is a BUE?
- (b) Derive equation for Chip Thickness ratio 'r' in orthogonal cutting operation. 5
- (c) Discuss the adverse effect of BUE formation. 5
- OR**
- (c) Discuss Tool Life with the reference of Cutting Fluid, Tool material, Depth of cut and feed. 5
- 2 (a) A hollow work piece of 60 mm outside diameter and 150 mm length is held on a mandrel between centres and turned all over in 4 passes. If the approach length = 20 mm, over travel = 12 mm, average feed = 0.8 mm/rev. cutting speed = 30 m/min., calculate the machining time. 8
- (b) Discuss difference between Capstan and Turret Lathe. 7
- OR**
- (b) Explain up right drilling machine with neat sketch. 7

- 3 Write short notes : (any **three**) 15
- (i) Methods of taper turning
 - (ii) Difference between Planner and Shaper machine
 - (iii) Tool signature (single point cutting tool)
 - (iv) Details of Radial drilling machine
 - (v) Size of Lathe machine.

SECTION - II

- 4 (a) Answer the following : 10
- (i) Give classification of milling machines.
 - (ii) Sketch an internal pull type broach and indicate the various terms relating to its teeth.
 - (iii) Give a list of abrasives used to make a grinding wheel.
 - (iv) Give list of gear cutting methods.
 - (v) Explain internal centreless grinding.
- (b) Index 69 and 83 divisions with a suitable indexing method. 5
- (c) Differentiate between up-milling and down milling with a neat sketch. 5

OR

- (c) Derive an expression for calculating machining time for face milling operation. 5
- 5 Answer the following :
- (a) Explain grinding wheel designation system. 7
 - (b) Why following treatment is necessary to grinding wheel? 8
 - (i) Trueing
 - (ii) Glazing
 - (iii) Wheel balancing.

OR

- (b) Differentiate between following : 8
- (i) Centretype and centreless grinding machine.
 - (ii) Push type and pull type broaching machine.
- 6 Answer any **three** from following : 15
- (a) Explain 3-2-1 principle of location.
 - (b) What is the role of jtgs and fixtures in machining?
 - (c) Explain universal dividing head with a neat sketch.
 - (d) Differentiate between a simple indexing and compound indexing.