

Seat No.	
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S.E. (Mechanical) (Part-II) (Semester-IV) (Revised)
Examination, May - 2018
MACHINE TOOLS AND PROCESSES
Sub. Code : 63364

Day and Date : Wednesday, 16 - 05 - 2018
Time : 10.00 a.m. to 1.00 p.m.

Total Marks : 100

- Instructions :**
- 1) All Questions are compulsory.
 - 2) Figures to the right indicate full marks.
 - 3) Assume suitable data, if necessary.
 - 4) Use of Non-programmable Scientific Calculator is allowed.

Q1) Attempt any four (4 marks each):

- a) Explain the properties of core sand. Suggest the methods to measure the same. [4]
- b) Briefly explain the function of runners and gates in the gating system. [4]
- c) What are the steps involved in pressure die casting. [4]
- d) Draw neat sketch of arc furnace and label all the parts. [4]
- e) State the defects related to melting process? Explain any two of them. [4]

Q2) Attempt any four (4 marks each):

- a) How does cold rolling differ from hot rolling in terms of the process and product? [4]
- b) List the different stages in drop forging process in production of a component such as spanner. [4]
- c) Show by schematic sketches the process of forward extrusion. Give two examples of components produced by extrusion. [4]
- d) What is the difference between a wire drawing operation and extrusion? [4]
- e) Why is the strength of rolled part is better that a cast piece. [4]

P.T.O.

Q3) Write a short note on (Any Three):

- a) Advantages and limitations of centrifugal casting process. [6]
- b) Defects in extrusion. [6]
- c) Blow molding. [6]
- d) Calendaring process for plastic. [6]

Q4) Attempt any four (4 marks each):

- a) Calculate the gear train for cutting following threads on a lathe having lead screw 4 TPI.
 - i) 6 TPIThe lathe is supplied with a change gear set from 20 to 120 teeth in steps of 5 teeth and an additional gear of 127 teeth. [4]
- b) Describe the various work holding devices used on turret lathe. [4]
- c) Discuss in brief methods of classification of boring machines. [4]
- d) Draw a neat sketch of radial drilling machine and label all the parts. [4]
- e) Where would you propose use of face plate on a lathe? Justify your answer. [4]

Q5) Attempt any four (4 marks each):

- a) What is meant by the term 'speed' & 'feed' of a planer. [4]
- b) Explain with neat sketch working principle of shaper. [4]
- c) Describe the function of any four parts of milling machines. [4]
- d) Sketch and describe the following operations on milling machine: [4]
 - i) Angular milling.
 - ii) Keyway milling.
- e) Which method of manufacturing of a gear is best suitable for helical gears? Give reasons. [4]

Q6) Write a short note on (Any Three):

- a) Various operations performed on drilling machine. [6]
- b) Electrical Discharge machining advantages and limitations. [6]
- c) Applications of Laser beam machining process with sketch. [6]
- d) Ultrasonic machining process. [6]

