

P P SAVANI UNIVERSITY

Fourth Semester of B. Tech. Examination

May 2019

SEME2050 Forming and Machining Processes

15.05.2019, Wednesday

Time: 09:00 a.m. To 11:30 a.m.

Maximum Marks: 60

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION - I

- Q - 1 Attempt any Five [05]**
- (i) In circular drawing process, when the depth of drawing is more than the diameter of the die, then the process is called as
(A) Forced drawing (B) Hollow drawing (C) Deep drawing (D) All of the above
- (ii) What is the process, in which the metal is caused to flow through a restricted orifice to create an extremely elongated strip of uniform and comparatively smaller cross-sectional area, called?
(A) Extrusion (B) Rolling (C) Drawing (D) Spinning
- (iii) A better machinable metal is one which gives
(A) Lower chip-tool contact area and larger shear angle (B) Higher chip-tool contact area and smaller shear angle (C) Lower chip-tool contact area and smaller shear angle (D) Higher chip-tool contact area and larger shear angle
- (iv) Which of the following component is manufactured with forging?
(A) Piston (B) Engine block (C) Connecting rod (D) Crankcase
- (v) Coining is the operation of _____
(A) Cold forging (B) Hot forging (C) Cold extrusion (D) Piercing
- (vi) What is forming Process?
- (vii) What is Rolling Process?
- Q - 2 (a) What is tool signature used for single point cutting tool according to ASA Nomenclature? [05]**
- Q - 2 (b) Explain different types of rolling mills in detail. [05]**
- OR**
- Q - 2 (a) How tool life is calculated and what is tool life criteria? [05]**
- Q - 2 (b) Differentiate Hot rolling and Cold rolling process. [05]**
- Q - 3 (a) List out different forging process used in manufacturing and explain any two in detail. [05]**
- Q - 3 (b) Explain the tube and wire drawing process in detail. [05]**
- OR**
- Q - 3 (a) List out different extrusion process and explain any two in detail. [05]**
- Q - 3 (b) List out different Press working operations and explain any two in detail. [05]**
- Q - 4 Attempt any one/two. [05]**
- (i) Explain the different types of Chip formation during machining operation.
- (ii) List out different defects in forging products

SECTION - II

- Q - 1 Attempt any Five** **[05]**
- (i) For drilling operation, the drill rotates with ____ pressure if job is held on earth.
(A) Upward (B) Downward (C) 45 degree inclined to both planes (D) None of the mentioned
- (ii) Which type of surface is produced in facing operation?
(A) Cylindrical (B) Taper (C) Flat (D) None of the mentioned
- (iii) Mention any four operations performed on a lathe.
- (iv) What is broaching process?
- (v) Give the names of different shaper machines according to the type of mechanism used for giving reciprocating motion to the ram.
- (vi) List the types of sawing machines.
- (vii) Name different types of milling machines.
- Q - 2 (a)** Discuss and differentiate up milling and down milling process. **[05]**
- Q - 2 (b)** Explain functions of basic parts of lathe machine with neat sketch. **[05]**
- OR**
- Q - 2 (a)** Clearly differentiate the capstan and turret Lathe. **[05]**
- Q - 2 (b)** Explain various drilling operations with neat sketch. **[05]**
- Q - 3 (a)** Describe various differences between shaper and planner. **[05]**
- Q - 3 (b)** List the various types of grinding machines and explain any one grinding machine. **[05]**
- OR**
- Q - 3 (a)** Differentiate between center type and center less grinding machines. **[05]**
- Q - 3 (b)** Explain the working of crank and slotted lever quick return mechanism of a shaper with a neat sketch. **[05]**
- Q - 4 Attempt any one/two.** **[05]**
- (i) Explain different operations performed with the help of a lathe.
- (ii) Explain Face milling and End milling process with neat sketch.
