

[03 - 3114]

III/IV B.E. DEGREE EXAMINATION.

First Semester

Mechanical Engineering

PRODUCTION DRAWING

(Effective from the admitted batch of 2006-2007)

Time : Three hours

Maximum : 70 marks

Plans are attached in separate sheet.

Answer ALL questions.


(Tolerance tables are permitted)

1. Indicate the tolerances and allowances for a Hole-Shaft pair designated by  $75 H_8 d_{10}$ . (10)
2. Explain the geometrical tolerance feature indicated by the following tolerance frames : (3)


(a) 

//	0.03/100	A
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(b) 

	0.2	PQ
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(c) 

	0.06	C
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3. Draw the following : (8)
- (a) M20 × 100 mm hexagonal bolt
  - (b) Counter sunk hole  $\phi$  25 mm × 45°
  - (c) A sawn nut for bolt size  $\phi$  30 (M 30)
  - (d) A spring washer to suit M 20 bolt.
4. Sketch one example with an appropriate tolerance frame showing the following geometrical tolerance features. (3)
- (a) The surface plane B is parallel to the base plane A within  $\pm 0.05$  mm deviation.
  - (b) Positional tolerance of a hole may vary within a cylinder of diameter 0.5 mm at MMC.
  - (c) The surface diameter of a shaft has a radial run-out maximum 0.1 mm with respect to its axis of rotation.
5. How the following are represented? (7)
- (a) Butt weld
  - (b) Brass material
  - (c) Glass
  - (d) Holes on circular pitch
  - (e) ACME threads on a component
  - (f) Feather key dia 20 mm size
  - (g) Worm gear.
6. Draw a neat sketch of lathe cutting tool and indicate nomenclature. (9)

7. Prepare the process sheet for the crank pin, Part 2  
(From Figure 1) (10)

Parts List

Part No.	Name	Material	Qty
1	Crank	Forged Steel	1
2	Crank pin	45C	1
3	Nut	MS	1
4	Washer	MS	1

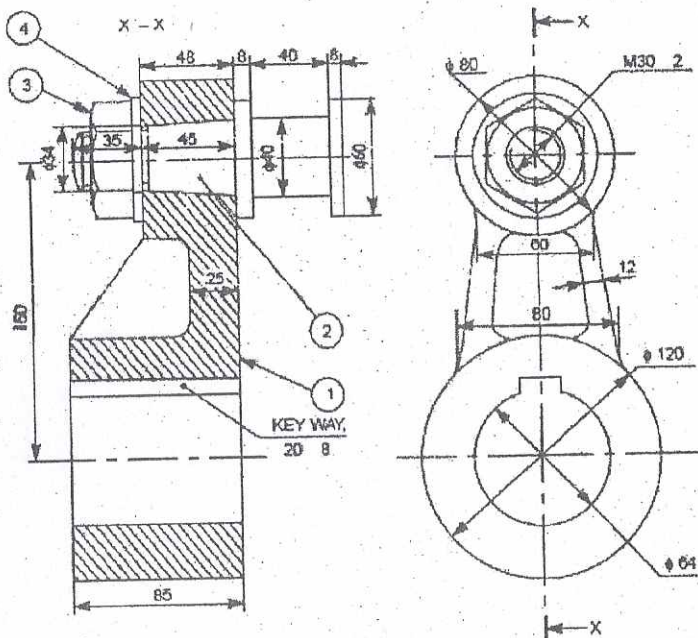


Figure 1

8. Indicate the following on a component : surface roughness, surface treatment, sampling length, direction of lay, machining allowance and other roughness values. (10)

9. Draw the Strip Layout of production of  $60 \times 30$  rectangles, 60 mm side triangles, and  $30\phi$  circles of 6 each, for thickness of 1.5 mm thick sheet. (10)