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C16-M-406

6451

BOARD DIPLOMA EXAMINATION, (C-16)

JUNE/JULY—2022

DME – FOURTH SEMESTER EXAMINATION

PRODUCTION DRAWING

Time : 3 hours]

[Total Marks : 60

PART—A

5×4=20

- Instructions :
- (1) Answer all questions.
 - (2) Each question carries five marks.
 - (3) Draw the following neatly with proportionate dimensions.
 - (4) Use of production drawing tables is allowed.

1. For each of the following hole and shaft assembly,

$\begin{matrix} 0.068 \\ \text{Shaft } 150^{0.043} \end{matrix}$ $\begin{matrix} 0.040 \\ \text{Hole } 150^{0.000} \end{matrix}$

Calculate (a) hole tolerance, (b) shaft tolerance, (c) minimum material condition, (d) maximum allowance condition and (e) type of fit.

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2. Draw the tolerance character symbol for the following :
 - (a) Flatness
 - (b) Cylindricity
 - (c) Round-out
 - (d) Position
 - (e) Parallelism

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3. Write the surface roughness grade numbers for the following roughness values :
- (a) 25 μm
 - (b) 1.6 μm
 - (c) 12.5 μm
 - (d) 3.6 μm
 - (e) 0.1 μm
4. Write the meanings of the following symbols/specifications :
- (a) Fe 410 Cu K
 - (b) 45C10G
 - (c) Stud AM 10 \times 30, IS : 1862-P-4.6
 - (d) Hex.bolt M20 \times 1.2 \times 75 N, IS : 1364-S-4.6
 - (e) Splines 6 \times 32 \times 28, IS : 2327

PART—B

- Instructions : (1) Answer *any* one question.
 (2) Each question carries forty marks.

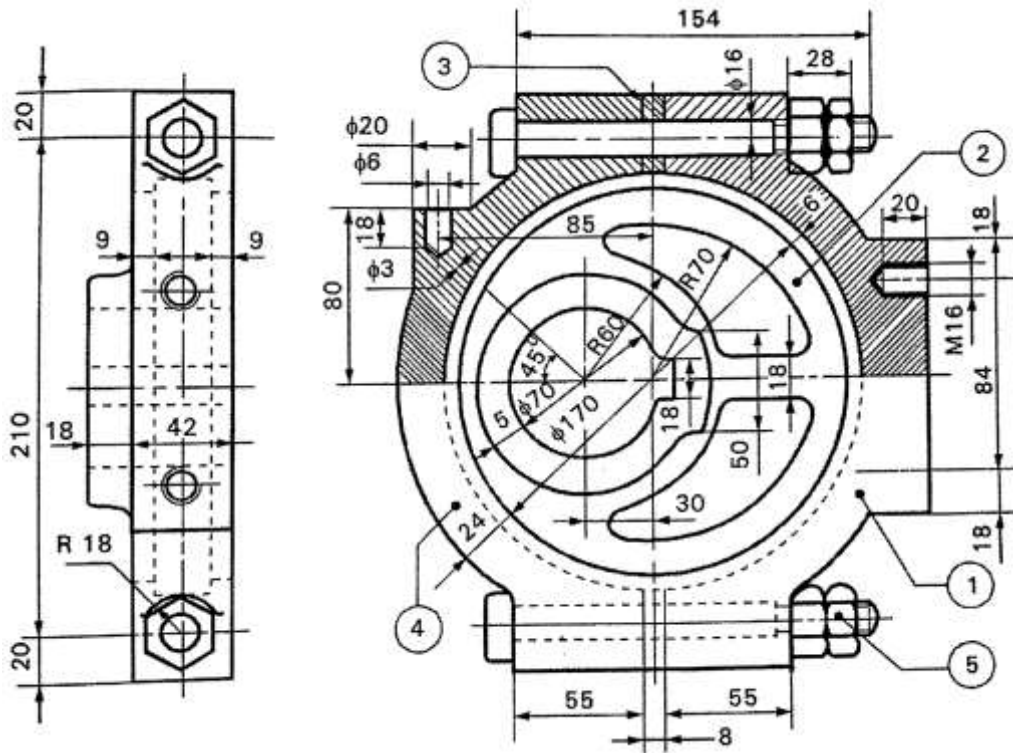
- * 5. Study the given assembly drawing of the Eccentric shown in figure 1.
- (a) Draw the part drawings for Strap and Sheave. 20
 - (b) Select suitable fits and tolerances. 4
 - (c) Prepare the process sheet for Strap. 7
 - (d) Indicate the surface roughness symbols and geometrical tolerance symbols. 6
 - (e) List out the materials and quantity of the components. 3

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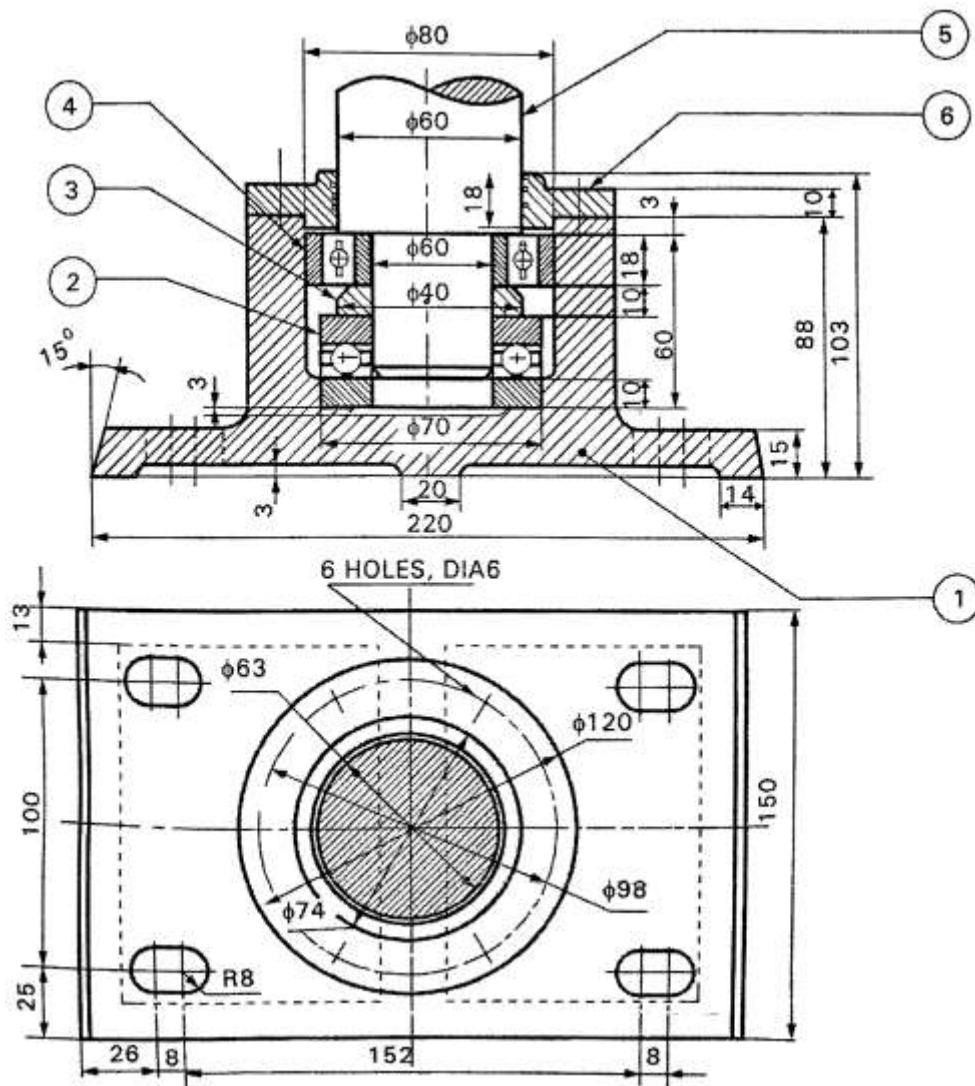


Bill of material :

| Part No. | Name | Raw material | Quantity |
|----------|---------------|-----------------------|----------|
| 1 | Strap | C.I – Casting | 1 |
| 2 | Sheave | C.I – Casting | 1 |
| 3 | Shim | Brass – Strips | 2 |
| 4 | Strap | C.I – Casting | 1 |
| 5 | Bolt with nut | M.S – Std. Components | 2 |

- * 6. Study the given assembly drawing of Foot Step Bearing shown in figure 2.
- (a) Draw the part drawings. 20
- (b) Select suitable fits and tolerances. 4
- (c) Prepare the process sheet. 7
- (d) Indicate the surface roughness symbols and geometrical tolerance symbols. 6
- (e) List out the materials and quantity of the components. 3

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Bill of material :

| Part No. | Name | Raw material | Quantity |
|----------|-----------------------|----------------|----------|
| 1 | Base | C.I – Casting | 1 |
| 2 | Thrust ball bearing | Std. Component | 1 |
| 3 | Spacer | C.I – Casting | 1 |
| 4 | (Radial) ball bearing | Std. Component | 1 |
| 5 | Shaft | MS ϕ 63 | 1 |
| 6 | Cover | C.I – Casting | 1 |

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