

Q.P. Code : 1216

(4 Hours)

[Total Marks : 100

N.B.

- 1) Question No.1 is compulsory.
- 2) Attempt any four questions from the remaining.
- 3) Use your judgment for any unspecified dimensions.
- 4) Use only drawing sheets for answering.
- 5) Use first angle method of projections for answering.
- 6) Neatness and cleanliness will be considered while assessing.

1. (a) Draw only with free hand the sketches for any two of the following (two views each): 10
(i) 'V' belt pulley
(ii) Oldham coupling
(iii) Protected type flange coupling.
(b) Draw I.S. conventional representation of assembly of threaded parts in external or sectional views 3
(c) What do you mean by fit? Explain different types of fits 7
2. (a) A vertical cone of diameter 100 mm and axis 100 mm is penetrated by a vertical square prism, having edges of base 45mm. The axis of the square prism is 10 mm away from the axis of the cone and the plane containing both the axes is perpendicular to the V.P. The rectangular face of the square prism makes 30 degrees with V.P. Draw the front view and the top view showing the curves of intersections. 10
(b) A square prism with side of base 40 mm and height 70 mm is kept on the H.P. on its base, with two vertical faces making 20° with V.P. A cylinder of diameter 40 mm penetrates completely through the prism, in such a way that the axis of the cylinder is parallel to V.P. and bisects the axis of the prism at right angle. Draw the projections showing curves of intersection. 10
- (b) Explain in general steps required to be followed in preparing assembly drawing from details and vice versa 8
4. Fig.2 shows detailed drawing of Ball Bearing. Assemble all the parts and draw the following views for the assembly:-
(i) Sectional Front View 12
(ii) Left Hand Side View 8
5. Fig.3 shows assembly of V Belt Drive. Draw the following:-
(i) Body

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|--------|--|----|
| | Sectional Front View. | 5 |
| | a) Right side View | 4 |
| (ii) | V- Pulley | |
| | a) Half sectional Front View | 4 |
| | b) Side View | 3 |
| (iii) | Shaft | |
| | a) Front View | 3 |
| (iv) | Woodruff Key | |
| | a) Front View | 1 |
| 6. | Fig.4 shows details of Gland and Stuffing Box Expansion Joint. Assemble all parts and draw:- | |
| | (i) Half sectional Front View | 12 |
| | (ii) Side View | 8 |
| 7. (a) | Fig.5 shows assembly of Drill Jig. Draw the following:- | |
| | (i) Frame | |
| | a) Sectional Front View | 4 |
| | b) Right Side View | 3 |
| | (ii) Locator | |
| | a) Front view | 3 |
| | b) Side View | 2 |
| (b) | (i) Explain with neat sketches the following. | |
| | (ii) Hole Basis System | 4 |
| | Shaft Basis System | 4 |

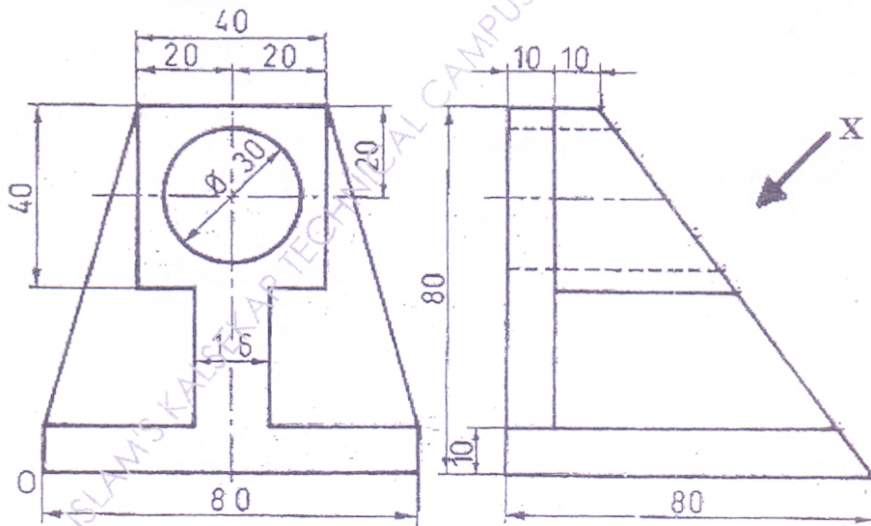


Fig.1 (Q.3-a)

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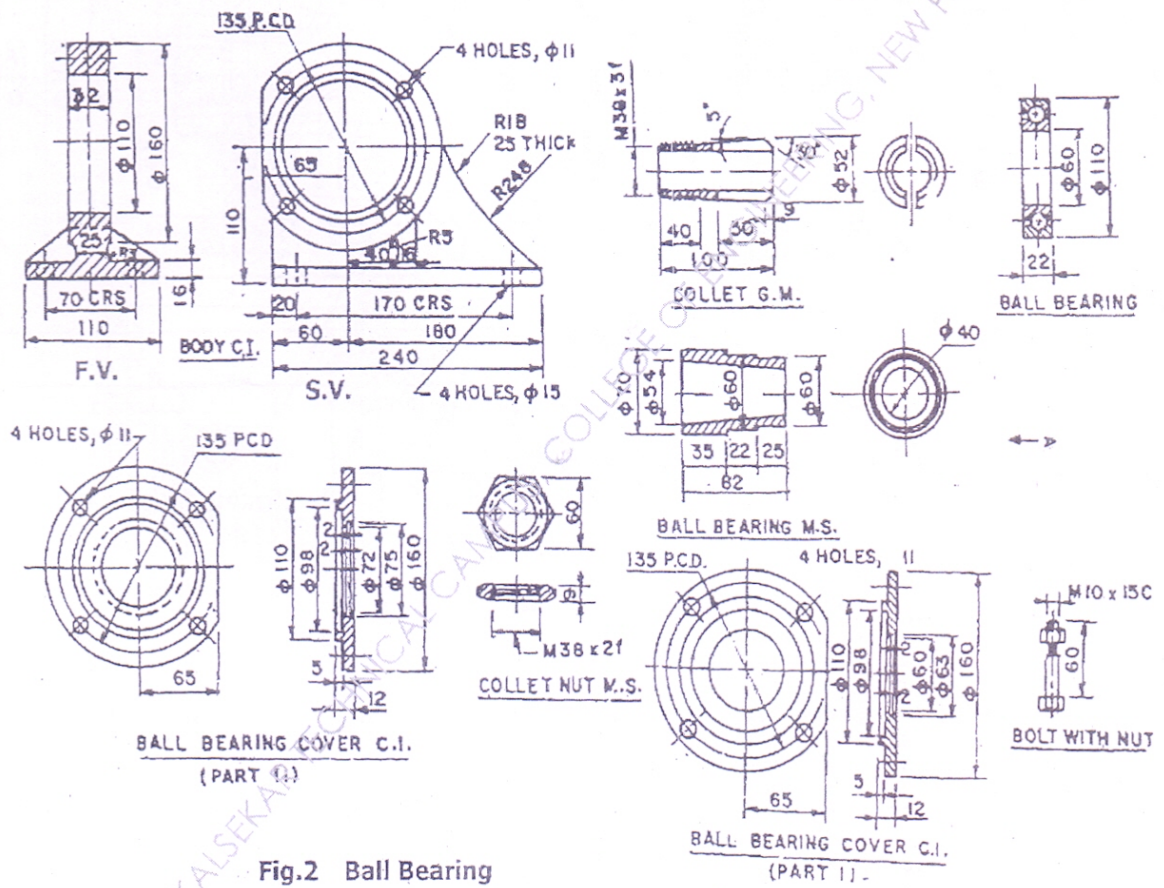
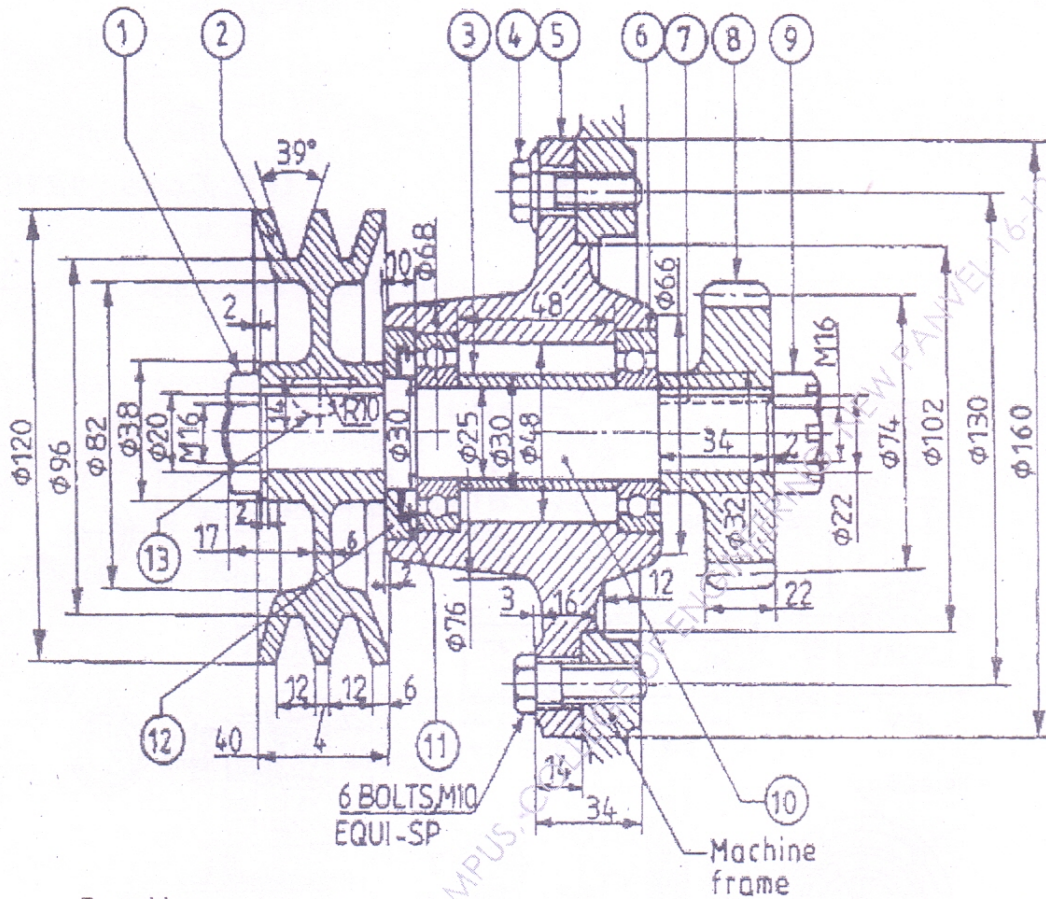


Fig.2 Ball Bearing

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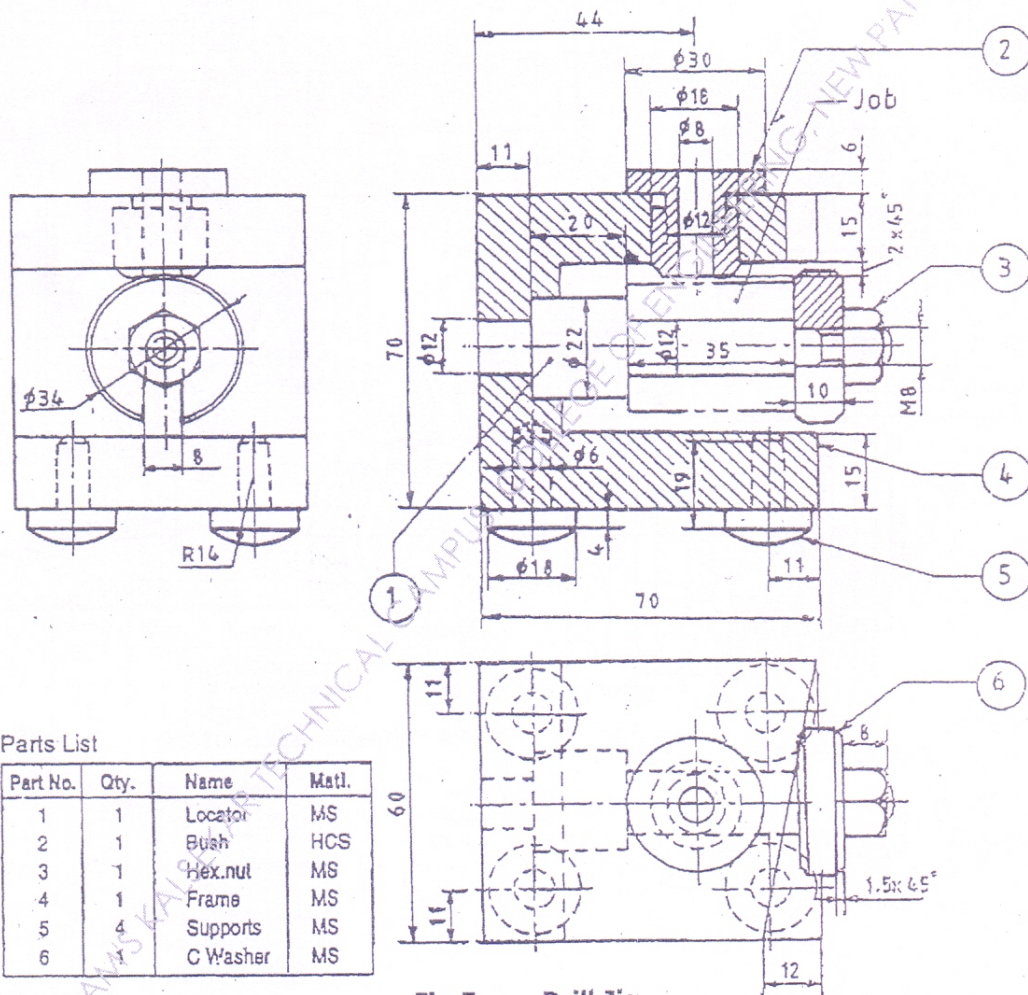


Parts List

Part No.	Qty.	Name	Mat.
1	1	Hex.nut	—
2	1	V-Pulley	CI
3	1	Sleeve	MS
4	6	Hex.hd cap screws	—
5	1	Body	CI
6	2	Bearings	—
7	1	Slunk key	MS
8	1	Gear	MCS
9	1	Hex. slotted nut	—
10	1	Shaft	MS
11	1	Grease seal	—
12	1	Bearing retainer	MS
13	1	Woodruff key	—

Fig.3 V Belt Drive

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Parts List

Part No.	Qty.	Name	Matl.
1	1	Locator	MS
2	1	Bush	HCS
3	1	Hex.nut	MS
4	1	Frame	MS
5	4	Supports	MS
6	1	C Washer	MS

Fig.5 Drill Jig