

Class: XII

Session: 2020-21

ENGINEERING GRAPHICS(046)

Sample Question Paper (Theory)

Marking Scheme

Time Allowed: 3 Hours

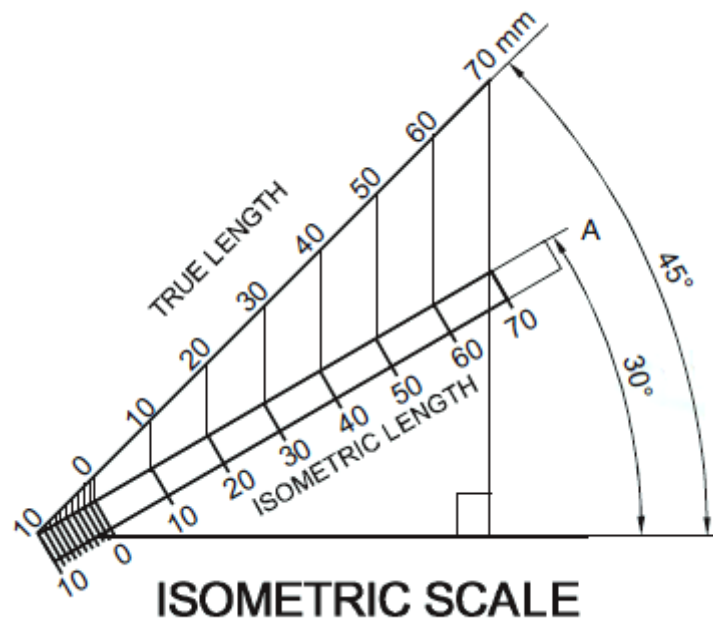
Maximum Marks: 70

Distribution of Marks			
1.	Answer the following Multiple-Choice questions. Print the correct choice on your drawing sheet.		Marks
	(i) (b)	Perspective projection.	1
	(ii) (c)	Knuckle thread	1
	(iii) (a)	1.5 d	1
	(iv) (d)	Gun Metal	1
	(v) (a)	Square rods	1
2. (i)	<b>ISOMETRIC SCALE</b>		<b>4</b>
		Marking of main divisions of 10 mm (at least seven divisions) with smaller divisions of 1 mm in first part, on true length.	1½
		Projections from scale 1:1 to get points on isometric scale, to get isometric length.	1½
		Printing 'True Length/Scale 1:1', 'Isometric Length/ Isometric Scale' and marking angles of 30° & 45°.	1
(ii)	<b>ISOMETRIC PROJECTION OF A PENTAGONAL PRISM</b>		<b>8</b>
		Drawing helping figure.	1
		Drawing both the isometric pentagons.	3
		Drawing the four face edges.	2
		Marking the axis (1½) and direction of viewing (1½).	1
		Dimensions.	1
(iii)	<b>ISOMETRIC PROJECTION OF A HEMISPHERE, PLACED CENTRALLY, ON THE TOP RECTANGULAR SURFACE OF A TRIANGULAR PRISM</b>		<b>12</b>
		<u>TRIANGULAR PRISM</u>	<b>6</b>
		Drawing helping figure.	1
		Drawing both the isometric triangles.	2
		Drawing the three horizontal edges.	1½
		Dimension and axis.	1½
		<u>HEMISPHERE</u>	<b>6</b>
		Drawing ellipse with centre lines.	2½
		Drawing curved surface.	1½
		Indicating the direction of viewing and axis.	1
		Dimensions.	1

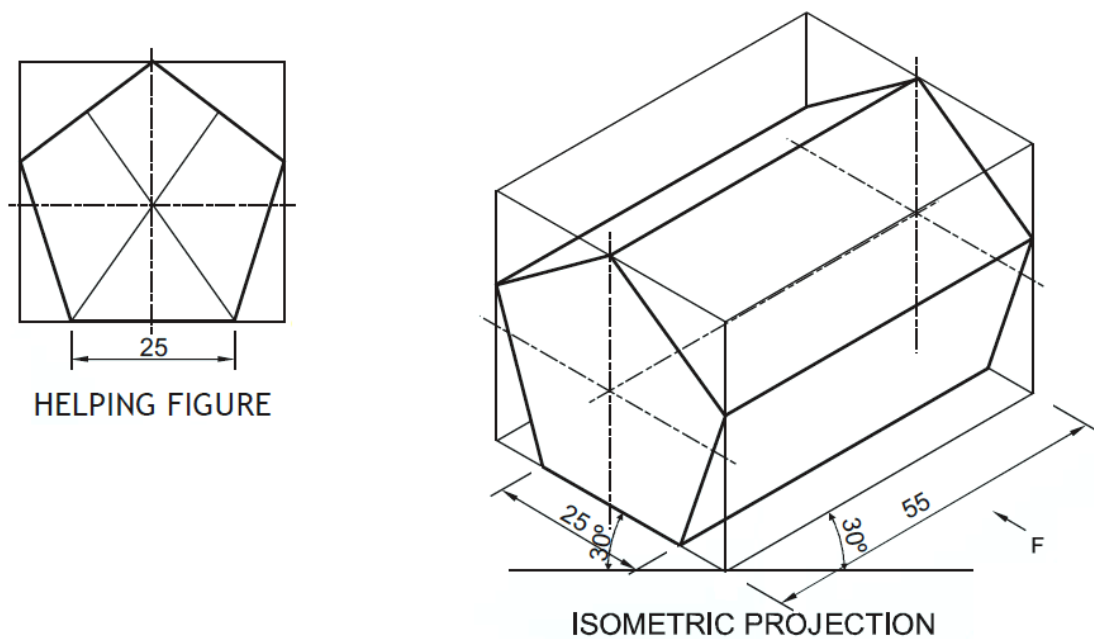
<b>3. (i)</b>	<b>SQUARE THREAD PROFILE</b>		<b>8</b>
		Horizontal and vertical distances (equal to half of pitch), marked correctly.	2
		Drawing crests (1), roots (1) of threads (minimum two) and flanks (1), drawn correctly.	3
		Drawing hatching lines and conventional break.	1
		Standard dimensions.	2
		<b>[ OR ]</b>	
	<b>HEXAGONAL HEADED BOLT</b>		<b>8</b>
		Drawing head of the bolt.	3
		Drawing shank of the bolt with threaded portion.	2
		Drawing side view.	1
		Standard dimensions.	2
<b>(ii)</b>	<b>60° CSK HEAD RIVET</b>		<b>5</b>
		Front view with vertical axis.	2½
		Top view.	1½
		Standard dimensions.	1
		<b>[ OR ]</b>	
	<b>STUD WITH SQUARE NECK</b>		<b>5</b>
		Front view with horizontal axis.	2½
		Side view.	1½
		Standard dimensions.	1
<b>4.</b>	<b>TURNBUCKLE (Assembly)</b>		
	(a)	<b>FRONT VIEW UPPER HALF IN SECTION:</b>	<b>15</b>
		Drawing the upper half of body (4) with hatching lines (1).	5
		Drawing the lower half of body.	4
		Drawing both the rods with 50 mm insertion in the body and conventional ends.	6
	(b)	<b>SIDE VIEW:</b>	<b>7</b>
		Drawing two circles of body.	2
		Drawing conventional end of rod with threading.	2½
		Drawing both supporting plates at a distance of 32 mm.	2
		Drawing cutting plane.	½
	<b>DETAILS :</b>		<b>6</b>
		Printing title.	1
		Scale used.	1
		Projection symbol.	1

		Six important dimensions.	3
		[OR]	
		<b>SLEEVE AND COTTER JOINT (Dis assembly)</b>	
		<b>(i) SLEEVE</b>	
	(a)	SECTIONAL FRONT VIEW :	<b>8</b>
		Drawing the boundary of sleeve with internal hole of dia 30mm.	4
		Drawing cotter holes.	2
		Hatching lines	2
	(b)	LEFT SIDE VIEW :	<b>4</b>
		Drawing both circles.	2
		Drawing hidden lines of cotter.	1
		Cutting plane.	1
		<b>(ii) COTTER B</b>	
	(a)	FRONT VIEW:	<b>5</b>
		Drawing cotter with taper on one side.	3
		Drawing curves on both ends.	2
	(b)	TOP VIEW :	<b>5</b>
		Drawing boundary of cotter with hidden line.	3
		Drawing both curves.	2
		<b>DETAILS :</b>	<b>6</b>
		Printing titles.	1
		Scale used.	1
		Projection symbol.	1
		Six important dimensions.	3

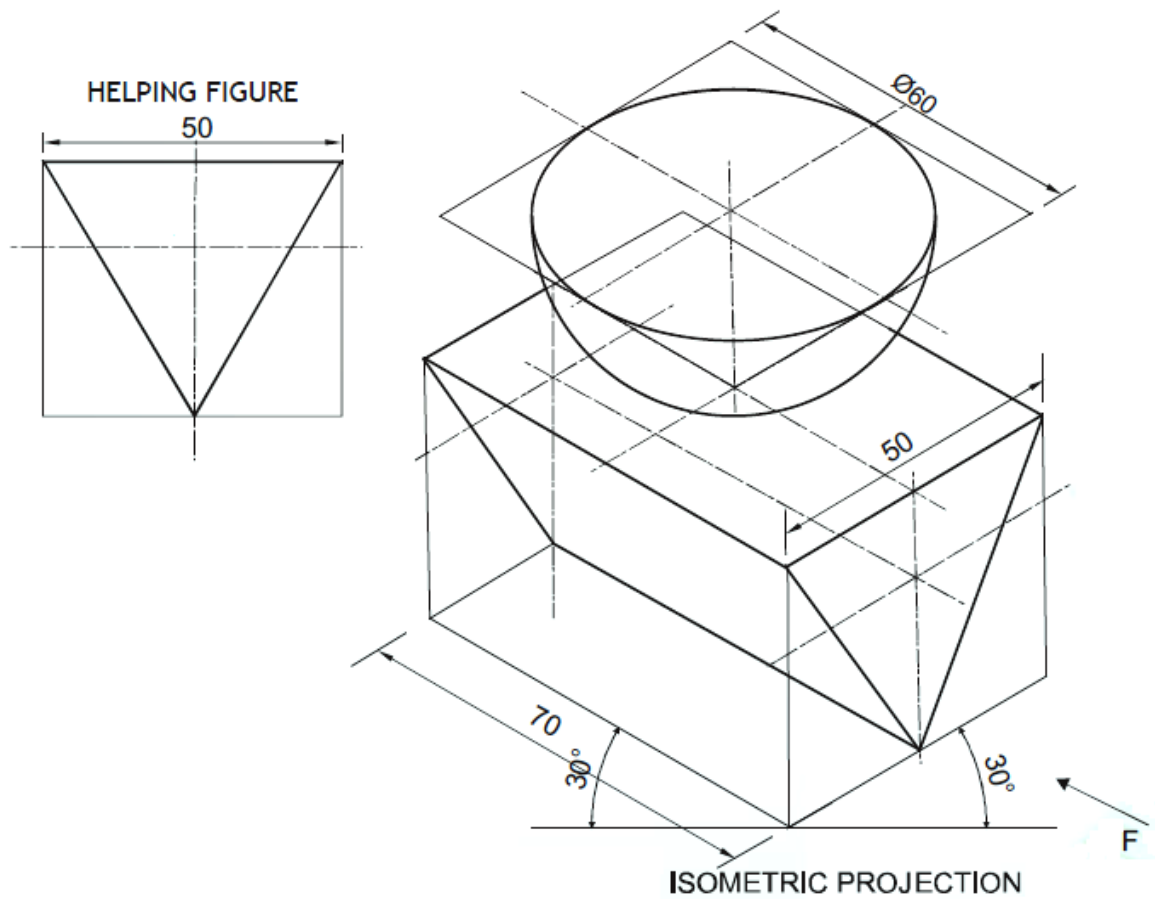
2(a)



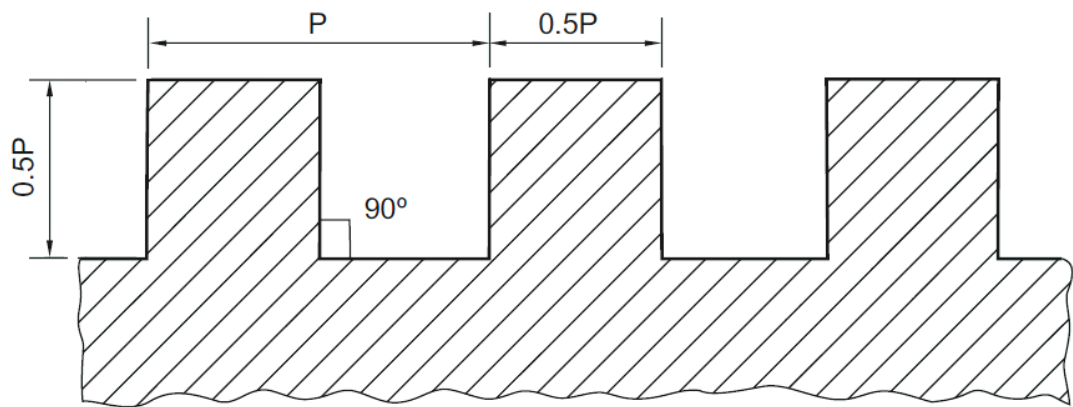
2(b)



2(c)



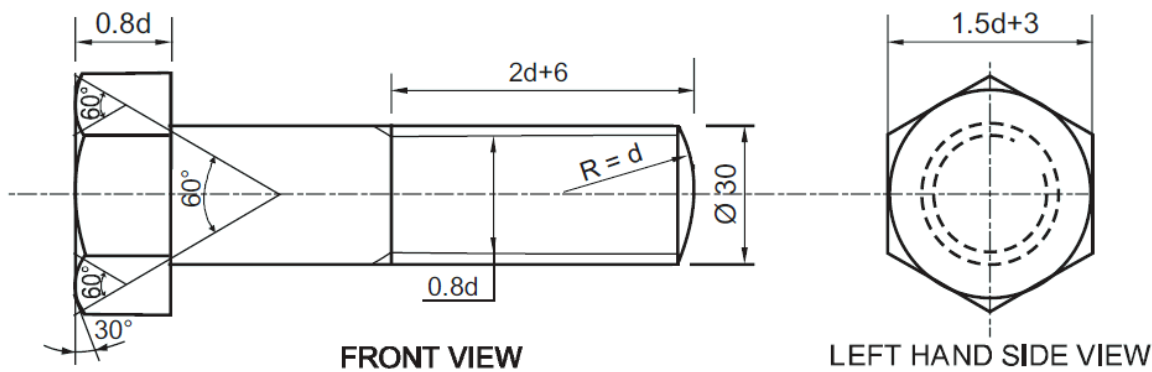
3(a)



P	0.5P	ANGLE
60	30	$90^\circ$

SQUARE THREAD PROFILE

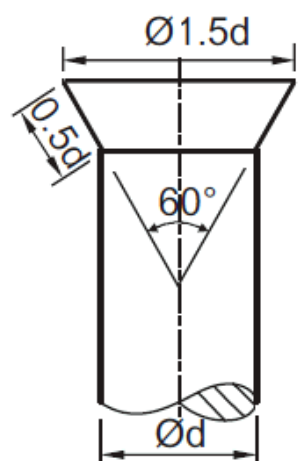
OR



$\phi d = 30\text{mm}$

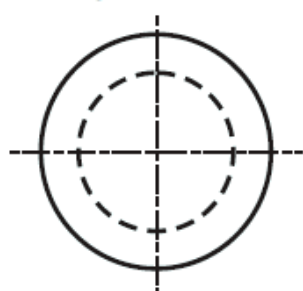
HEXAGONAL BOLT

3 (b).



d	20
0.5d	10
1.5d	30

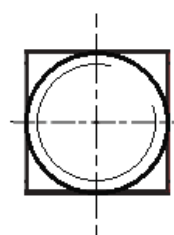
FRONT VIEW



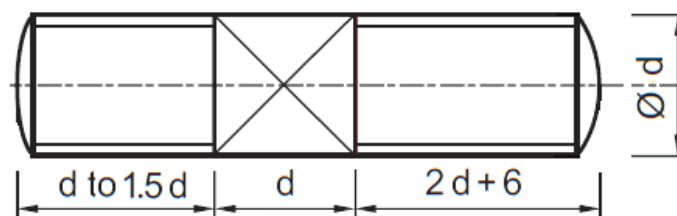
TOP VIEW

60° CSK HEAD RIVET

OR



SIDE VIEW



FRONT VIEW

d = 20mm

STUD WITH SQUARE NECK

4.

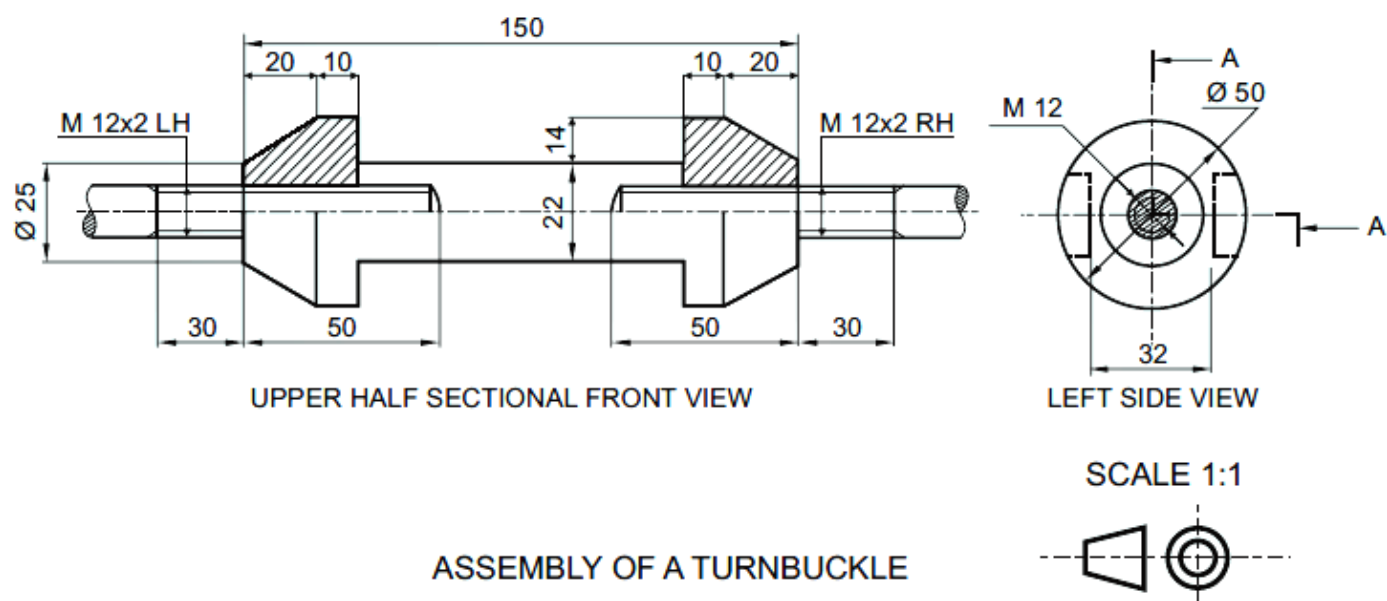


Figure 1

OR



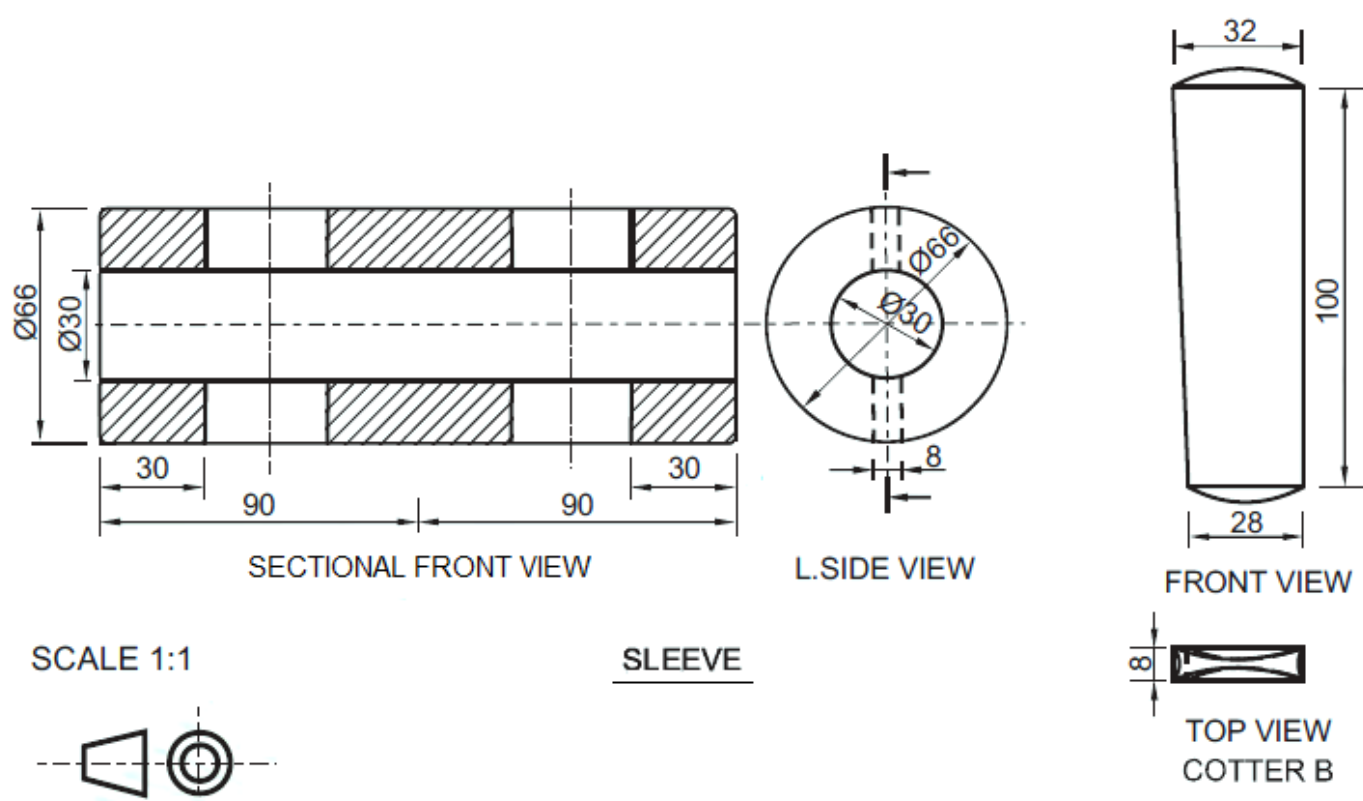


Figure 2