

Class: XII

Session: 2020-21

ENGINEERING GRAPHICS(046)

Sample Question Paper (Theory)

Marking Scheme

Time Allowed: 3 Hours

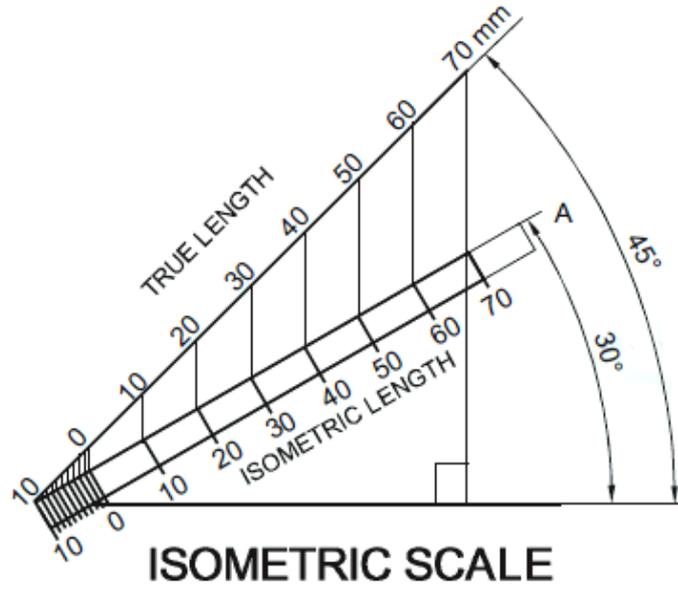
Maximum Marks: 70

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)	ISOMETRIC SCALE	4
	Marking of main divisions of 10 mm (at least seven divisions) with smaller divisions of 1 mm in first part, on true length.	1 ^{1/2}
	Projections from scale 1:1 to get points on isometric scale, to get isometric length.	1 ^{1/2}
	Printing 'True Length/Scale 1:1', 'Isometric Length/ Isometric Scale' and marking angles of 30° & 45°.	1
(ii)	ISOMETRIC PROJECTION OF A PENTAGONAL PRISM	8
	Drawing helping figure.	1
	Drawing both the isometric pentagons.	3
	Drawing the four face edges.	2
	Marking the axis (1/2) and direction of viewing (1/2).	1
	Dimensions.	1
(iii)	ISOMETRIC PROJECTION OF A HEMISPHERE, PLACED CENTRALLY, ON THE TOP RECTANGULAR SURFACE OF A TRIANGULAR PRISM	12
	<u>TRIANGULAR PRISM</u>	6
	Drawing helping figure.	1
	Drawing both the isometric triangles.	2
	Drawing the three horizontal edges.	1 ^{1/2}
	Dimension and axis.	1 ^{1/2}
	<u>HEMISPHERE</u>	6
	Drawing ellipse with centre lines.	2 ^{1/2}
	Drawing curved surface.	1 ^{1/2}
	Indicating the direction of viewing and axis.	1
	Dimensions.	1

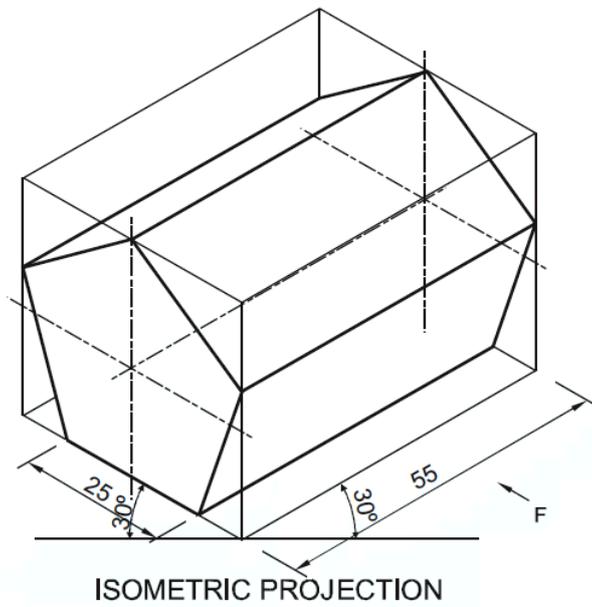
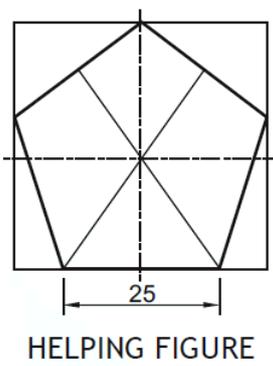
3. (i)	SQUARE THREAD PROFILE		8
		Horizontal and vertical distances (equal to half of pitch), marked correctly.	2
		Drawing crests (1), roots (1) of threads (minimum two) and flanks (1), drawn correctly.	3
		Drawing hatching lines and conventional break.	1
		Standard dimensions.	2
		[OR]	
	HEXAGONAL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

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

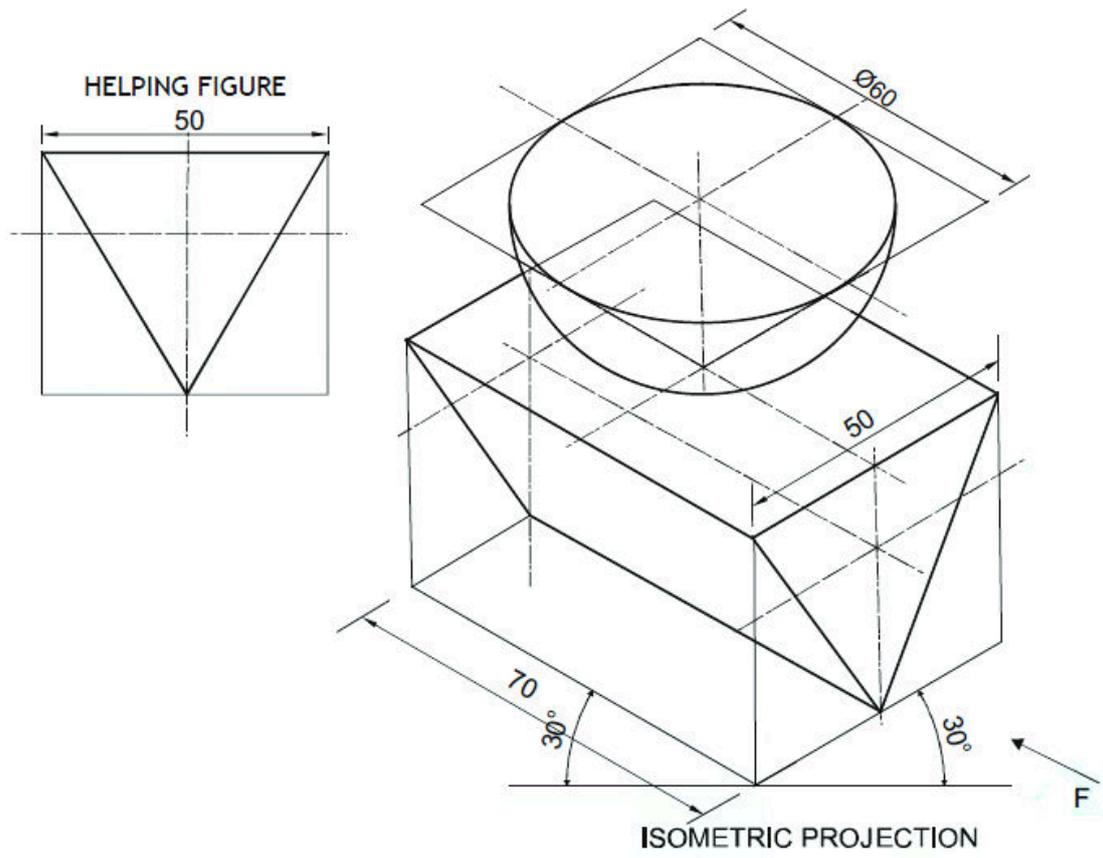
2(a)



2(b)

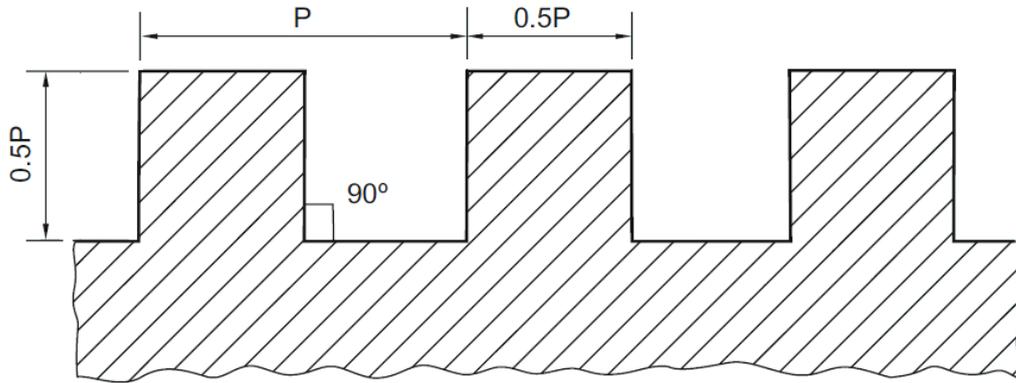


2(c)



3(a)

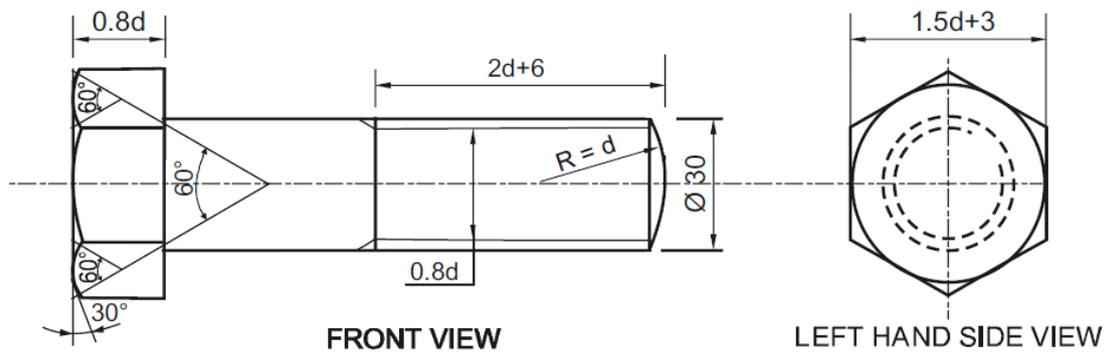
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P	0.5P	ANGLE
60	30	90°

SQUARE THREAD PROFILE

OR



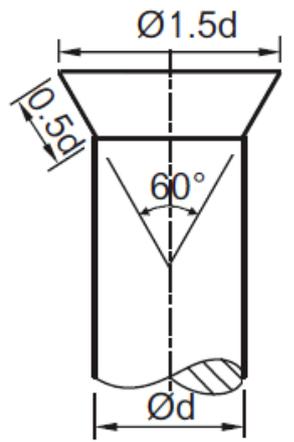
FRONT VIEW

LEFT HAND SIDE VIEW

$\text{Ø}d = 30\text{mm}$

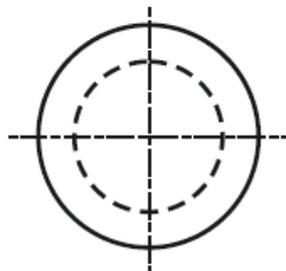
HEXAGONAL BOLT

3 (b).



d	20
0.5d	10
1.5d	30

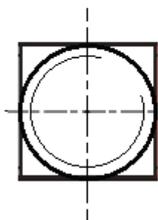
FRONT VIEW



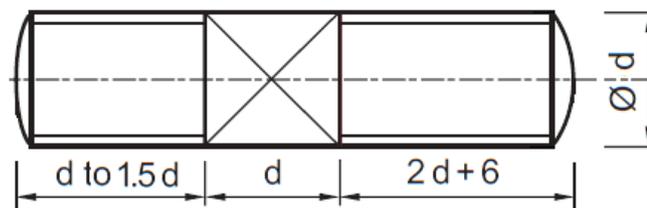
TOP VIEW

60° CSK HEAD RIVET

OR



SIDE VIEW



FRONT VIEW

d = 20mm

STUD WITH SQUARE NECK

4.

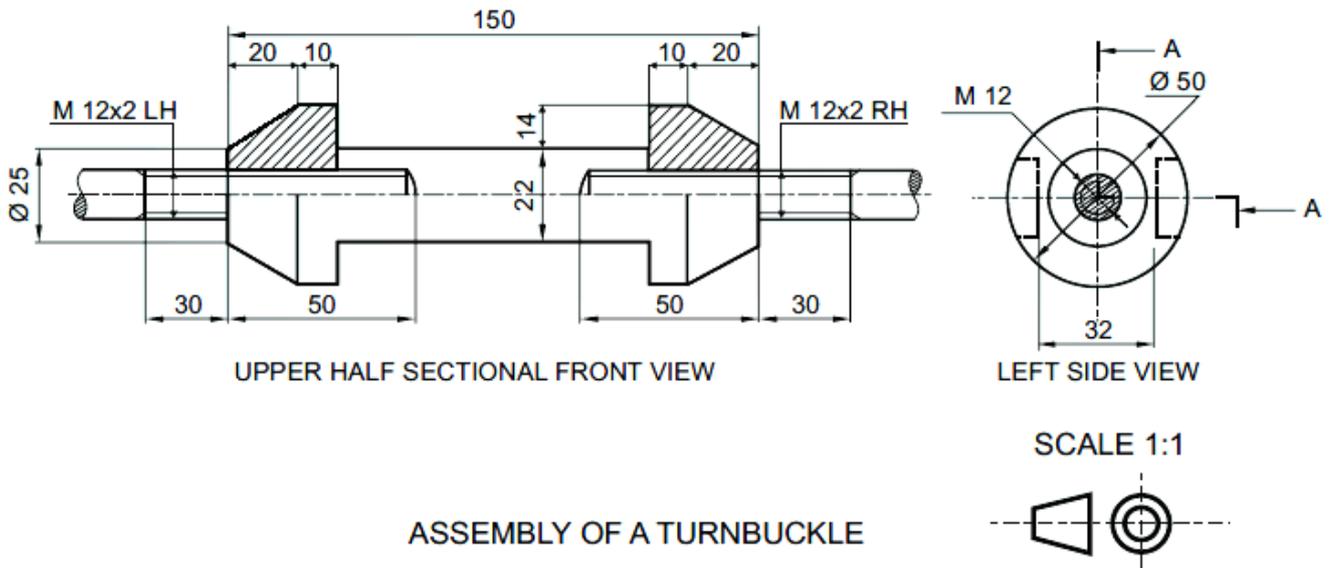
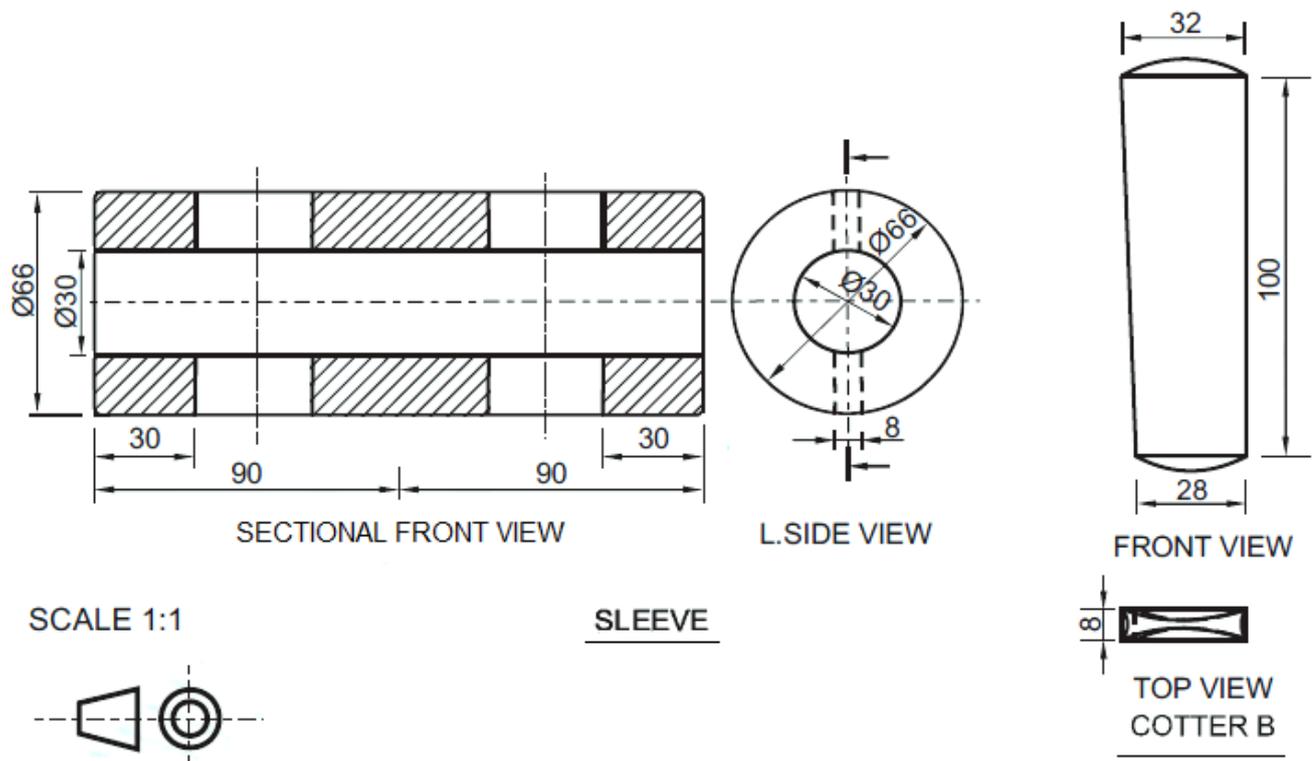


Figure 1

OR

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SLEEVE AND COTTER JOINT

Figure 2

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