

**SAMPLE QUESTION PAPER**  
**MARKING SCHEME**  
**XII – (2023-24)**  
**ENGINEERING GRAPHICS (046)**

*Time Allowed: 3 hours*

*Maximum Marks: 70*

**SECTION – A**

**Value Points**

- |  |   |
|--|---|
| 1. (a) or 15°  | 1 |
| 2. (b) or on the left side of front view   | 1 |
| 3. (d) or orthographic projection  | 1 |
| 4. (d) or 120°   | 1 |
| 5. (c) or B and C only   | 1 |
| 6. (b) or B and C only   | 1 |
| 7. (a)   | 1 |
| 8. (a)   | 1 |
| 9. (d) or B and D only   | 1 |
| 10. (a)  | 1 |
| 11. (a) or Journal   | 1 |
| 12. (d) or 60°   | 1 |
| 13. (c) or Nut   | 1 |
| 14. (c) or three   | 1 |
| 15. (a) or 1-iii, 2-iv, 3-ii, 4-i  | 1 |
| 16. (b) or Machine screws are temporary fasteners whereas rivets are permanent fasteners | 1 |
| 17. (b) or collar head   | 1 |
| 18. (a) or 1.6d  | 1 |
| 19. (a) or Snap head rivet   | 1 |
| 20. (b) or one visible and one invisible (dotted) circle                                 | 1 |

**SECTION – B**

21. (a) ISOMETRIC SCALE	<b>5</b>
(i) Drawing 45° inclined line showing true lengths	1
(ii) Projections on 30° inclined line showing isometric length with 1mm subdivisions in one part	3
(iii) Writing titles, sub titles and angles	1
21. (b) ISOMETRIC PROJECTION OF TRIANGULAR PRISM	<b>10</b>
(i) Helping figure	1
(ii) Drawing both the iso-triangles	4
(iii) Drawing three long/face edges	3
(iv) Dimensions	1
(v) Indicating the axis and direction of viewing	1
22. B.S.W. THREAD	<b>8</b>
(i) Distance equal to pitch, and angles of 55°	2
(ii) Curves for threads	2
(iii) Side edges / flanks	2
(iv) Dimensions	2

**OR**

ASSEMBLY OF SQUARE BOLT AND NUT (Front view)	<b>8</b>
(i) Drawing front view of square bolt with details	4
(ii) Drawing front view of square nut assembled properly with details	2
(iii) Dimensions	2

### 23. ASSEMBLY OF GIB AND COTTER JOINT

<b>(a) FRONT VIEW UPPER HALF IN SECTION</b>	<b>13</b>
(i) Drawing upper half of fork end and eye end with clearance	5
(ii) Drawing lower half of fork end and eye end	3
(iii) Drawing the gib and cotter	4
(iv) Hatching lines	1
<b>(b) SIDE VIEW, SEEN FROM RIGHT</b>	<b>8</b>
(i) Drawing fork end with conventional end in the eye end of body	4½
(ii) Drawing gib and cotter with hidden lines	3
(iii) Drawing cutting plane	½
<b>(c) OTHERS</b>	<b>6</b>
(i) 6 Important Dimensions	3
(ii) Printing title, Projection symbol and Scale used	3

OR

### DIS-ASSEMBLY OF TURNBUCKLE

<b>(a) BODY</b>	
(i) Front View Upper Half In Section	<b>9</b>
a. Drawing body with conical ends and hatching lines in upper half	6
b. Drawing space for rods with internal threads	3
(ii) Top View.	<b>6</b>
a. Drawing body with conical ends and correct vertical and horizontal lines	4
b. Drawing hidden lines for internal threads and space for rods	2

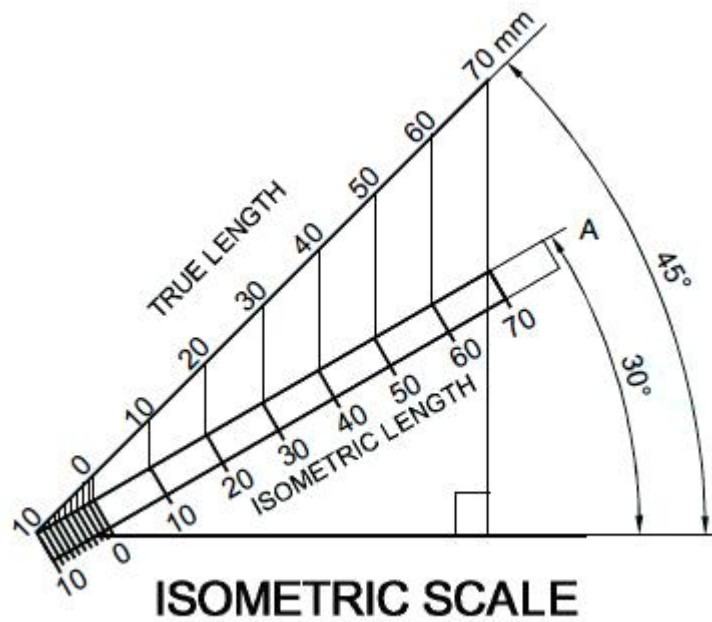
**(b) ROD – A**

- |   |          |
|---|----------|
| (i) Front View  | <b>4</b> |
| a. Drawing rod with conventional broken end and threads as per convention | 4        |
| (ii) Right Side View  | <b>2</b> |
| a. Drawing two circles as per conventions                                 | 2        |

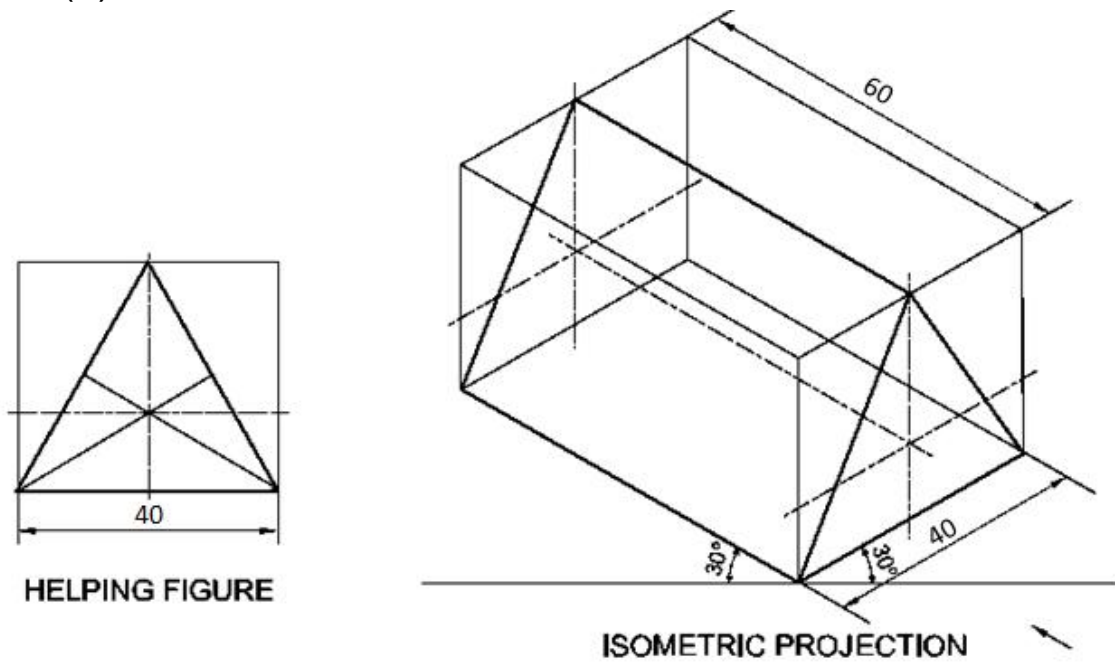
**(c) OTHERS** **6**

- |  |   |
|--|---|
| (i) 6 Important Dimensions.                                | 3 |
| (ii) Printing titles, Symbol of Projection and Scale used. | 3 |

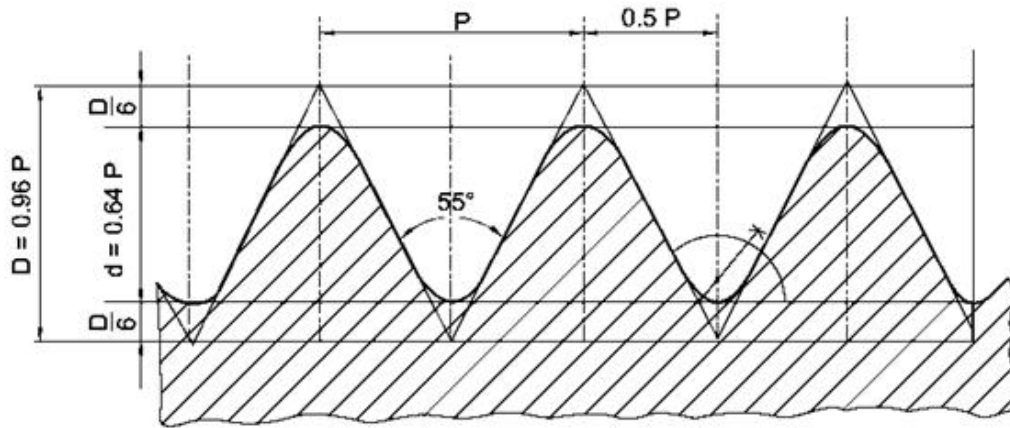
Q21 (a)



Q21 (b)



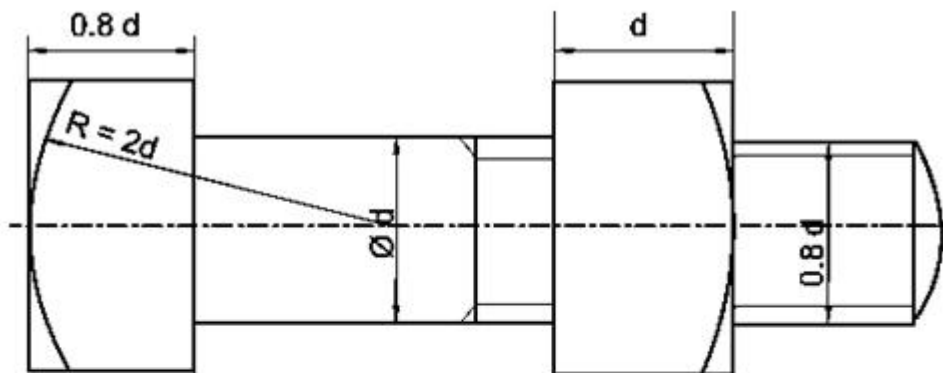
Q22



P	D	d	D/6
50	48	32	8

**STANDARD PROFILE OF B.S.W. SCREW THREAD**

**OR**

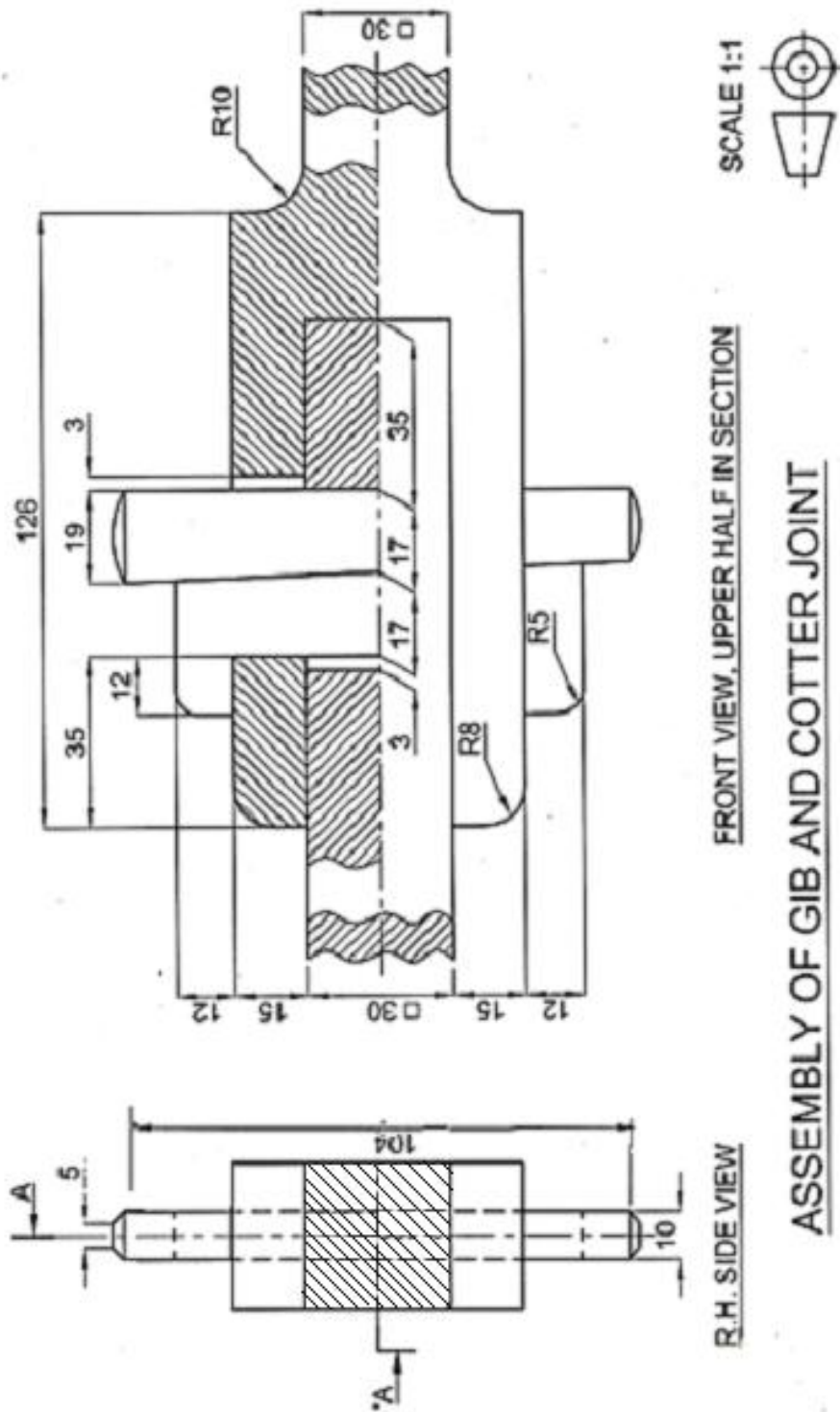


**FRONT VIEW**

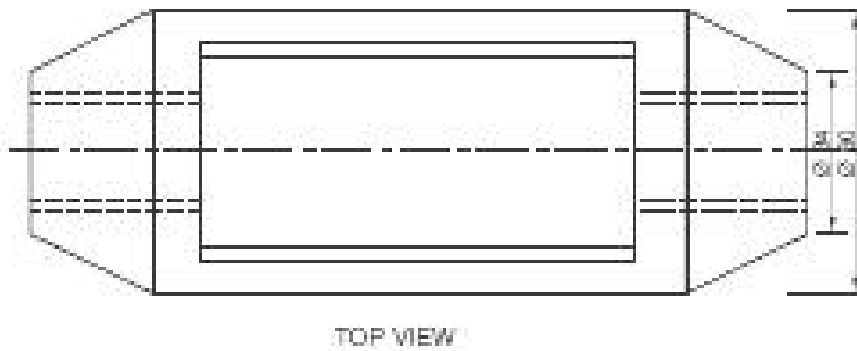
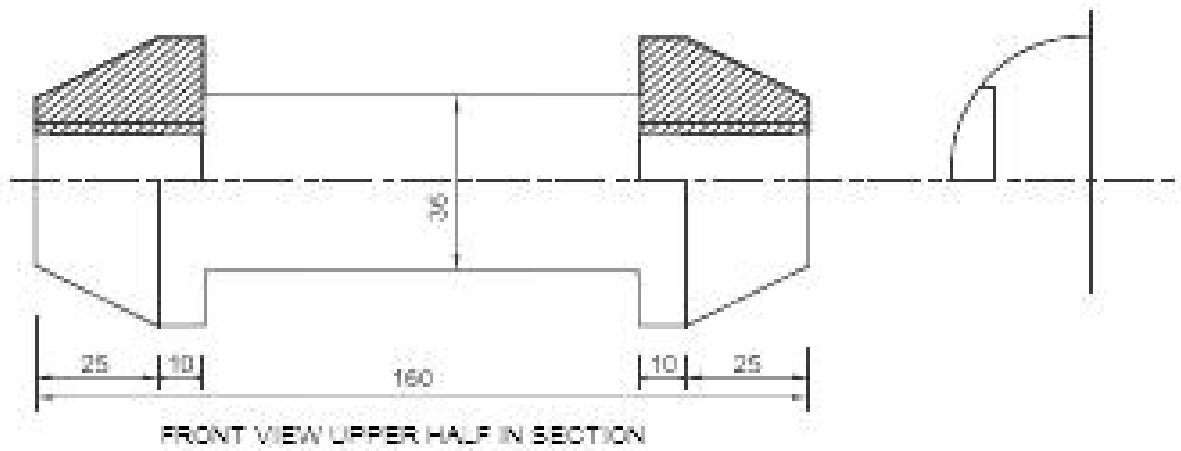
d	0.8d	1.5d	2d	2d+6
24	19.2	36	48	54

**ASSEMBLY OF SQUARE BOLT AND SQUARE NUT**

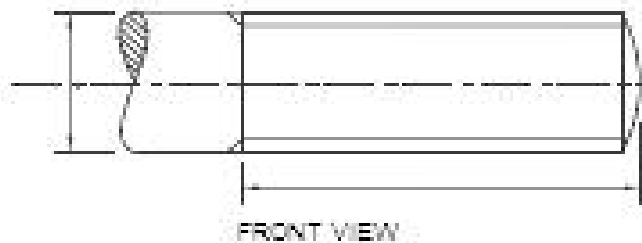
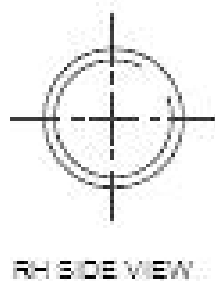
Q23



OR

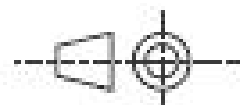


BODY



ROD - A

SCALE 1:1



**DISASSEMBLY OF TURNBUCKLE**