

SAMPLE QUESTION PAPER (2017-18)

ENGINEERING GRAPHICS (046)

Marking Scheme

VALUE POINTS

| | | |
|-----------|--|-----------|
| Q1 | MULTIPLE CHOICE QUESTIONS | 5 |
| (i) | c OR 60° | 1 |
| (ii) | b OR Rivet | 1 |
| (iii) | a OR an ellipse | 1 |
| (iv) | c OR Crowning | 1 |
| (v) | b OR Two | 1 |
| Q2 | (a) ISOMETRIC SCALE | 4 |
| (i) | Drawing 45° inclined lines showing true lengths | 1 |
| (ii) | Projections on 30° inclined line showing isometric length with one 1mm subdivisions | 2 |
| (iii) | Writing titles, sub titles and angles | 1 |
| | (b) ISOMETRIC PROJECTION OF PENTAGONAL PRISM | 7 |
| (i) | Helping figure | 1 |
| (ii) | Drawing isometric pentagons. | 2 |
| (ii) | Drawing face edges, parallel to horizontal axis. | 2 |
| (iii) | Indicating the axis, direction of viewing. | 1 |
| (iv) | Dimensions | 1 |
| | (c) ISOMETRIC PROJECTION OF COMBINATION OF SOLIDS | 13 |
| (i) | Helping figures | 1 |
| (ii) | Drawing isometric hexagons | 2 |
| (iii) | Drawing vertical lines indicating the faces | 2 |
| (iv) | Drawing triangular base of pyramid | 2 |
| (v) | Drawing slant edges | 2 |
| (vi) | Common axis, dimensioning, direction of viewing | 4 |

| | | |
|-----------|--|----------|
| Q3 | (a) <u>BSW THREAD PROFILE</u> | 8 |
| | (i) Distance, equal to pitch, marked correctly and angles of 55° , drawn correctly. | 2 |
| | (ii) Curves for threads (minimum two), drawn correctly. | 3 |
| | (iii) Side edges (flanks), drawn correctly. | 1 |
| | (iv) Dimensions and hatching lines. | 2 |

OR

| | | |
|--|---|----------|
| | TEE HEADED BOLT | 8 |
| | FRONT VIEW | |
| | (i) Threaded and unthreaded portions of cylindrical shank with square neck. | 3 |
| | (ii) Head of bolt. | 1 |
| | SIDE VIEW | |
| | (i) Rectangle with one horizontal line. | 1 |
| | (ii) Two circles as per convention. | 1 |
| | Standard dimensions. | 2 |

| | | |
|--|---|----------|
| | (b) FEATHER KEY WITH GIB HEAD ON BOTH ENDS | 5 |
| | (i) Sketching front view | 2 |
| | (ii) Sketching top view and side view | 2 |
| | (iii) Standard dimensions | 1 |

OR

| | | |
|--|------------------------------------|----------|
| | 60° COUNTER SUNK HEAD RIVET | 5 |
| | (i) Sketching front view | 2 |
| | (ii) Sketching top view | 2 |
| | (iii) Standard dimensions | 1 |

| | | |
|-----------|--|-----------|
| Q4 | GIB AND COTTER JOINT (Assembly) | |
| | (a) <u>FRONT VIEW</u> (Upper Half in Section): | 14 |
| | (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 |

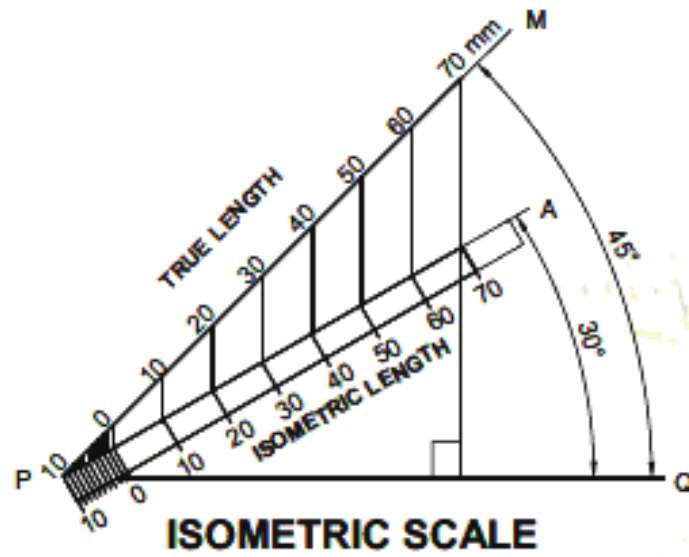
| | | |
|-------|---|-------------------------------|
| (v) | Broken ends of fork end and eye end. | 1 |
| (b) | <u>LEFT SIDE VIEW:</u> | 8 |
| (i) | Drawing fork end with conventional end in eye end of body. | 4 ¹ / ₂ |
| (ii) | Drawing gib and cotter with hidden lines | 3 |
| (iii) | Drawing cutting plane. | 1 ¹ / ₂ |
| (c) | Printing titles of both (1), scale used (1), drawing projection symbol (1) and six dimensions (3) | 6 |

OR

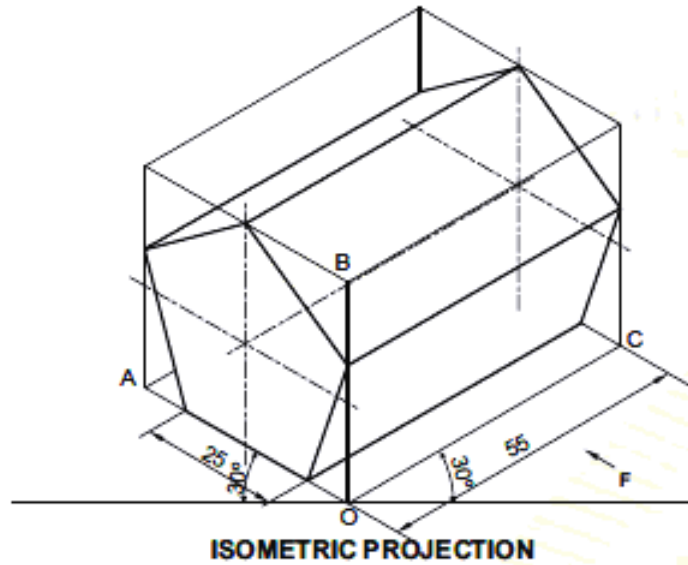
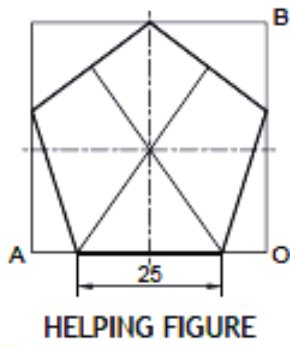
OPEN BEARING (Dis-assembly)

| | | |
|-------|--|-------------------------------|
| (1) | BODY | |
| (a) | <u>FRONT VIEW</u> (Left Half in Section): | 8 |
| (i) | Drawing left half with mounting hole and recess at bottom. | 4 |
| (ii) | Drawing right half. | 3 |
| (iii) | Hatching lines. | 1 |
| (b) | <u>TOP VIEW:</u> | 7 |
| (i) | Drawing boundary with four vertical lines. | 3 |
| (ii) | Hidden lines. | 1 ¹ / ₂ |
| (iii) | Drawing both mounting holes. | 2 |
| (iv) | Drawing cutting plane. | 1 ¹ / ₂ |
| (2) | BUSH | |
| (a) | <u>FRONT VIEW</u> (Left Half in Section): | 4 |
| (i) | Drawing left half. | 1 ¹ / ₂ |
| (ii) | Drawing right half. | 1 ¹ / ₂ |
| (iii) | Hatching lines. | 1 |
| (b) | <u>LEFT SIDE VIEW:</u> | 3 |
| (i) | Drawing complete view with hidden lines. | 3 |
| (3) | Printing titles of both (1), scale used (1), drawing projection symbol (1) and six dimensions (3). | 6 |

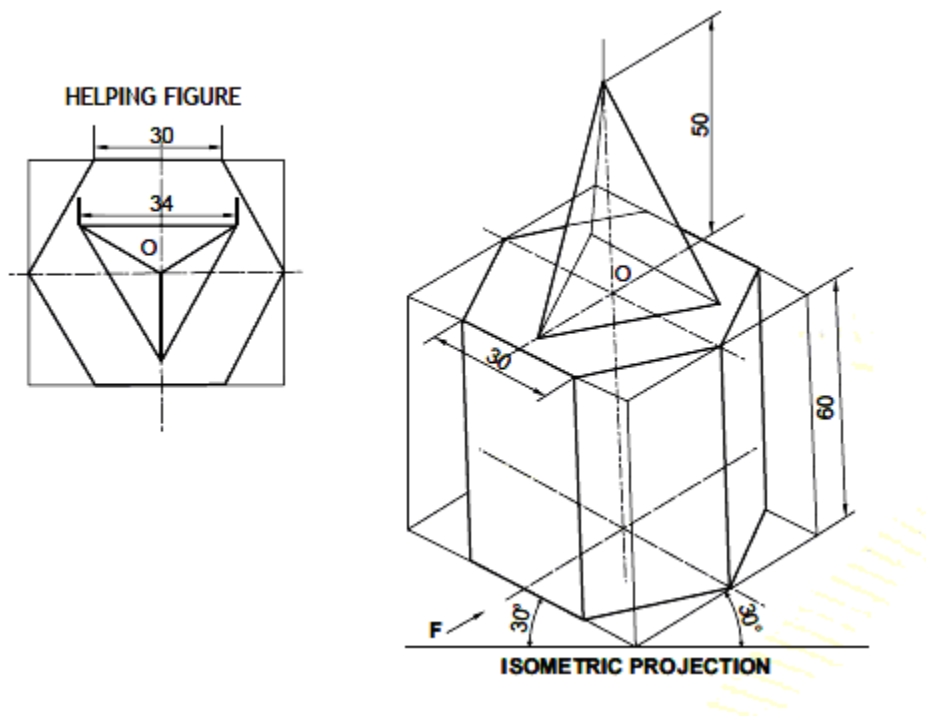
Q2 (a)



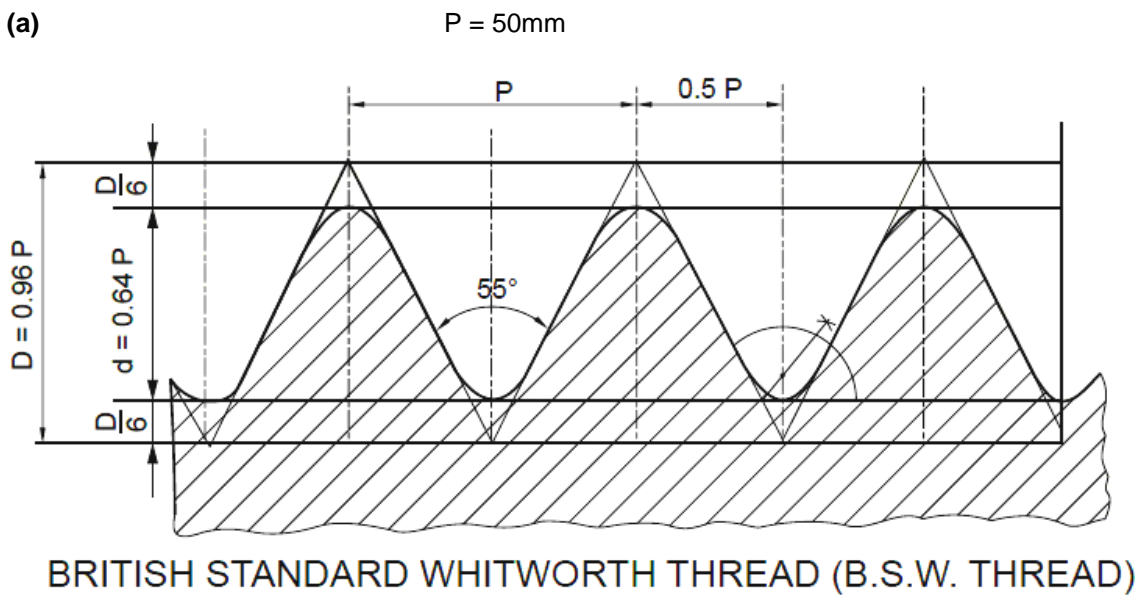
Q2 (b)



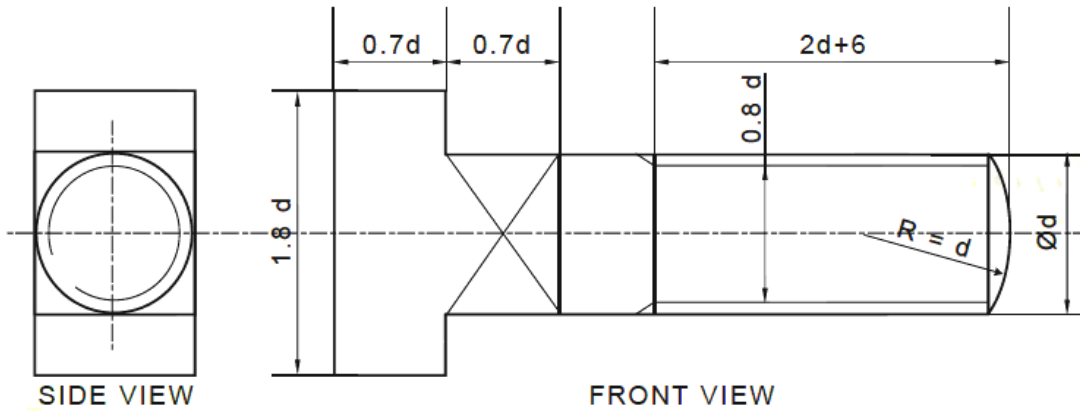
Q2 (c)



Q3 (a)



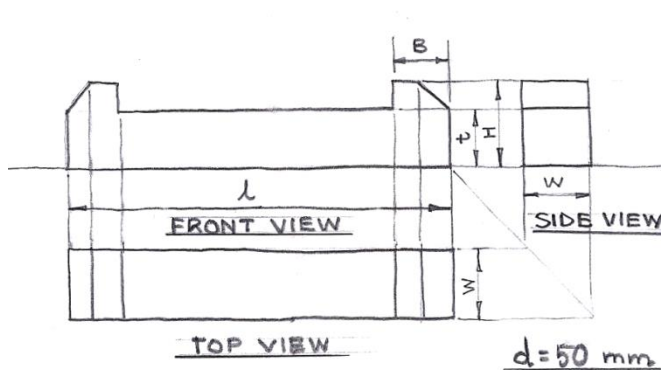
OR



T-HEADED BOLT

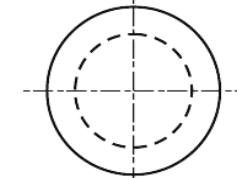
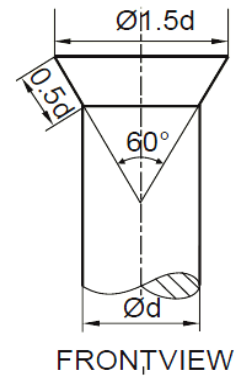
$d = 25\text{mm}$

Q3 (b)



FEATHER KEY WITH GIB HEAD
AT BOTH THE ENDS

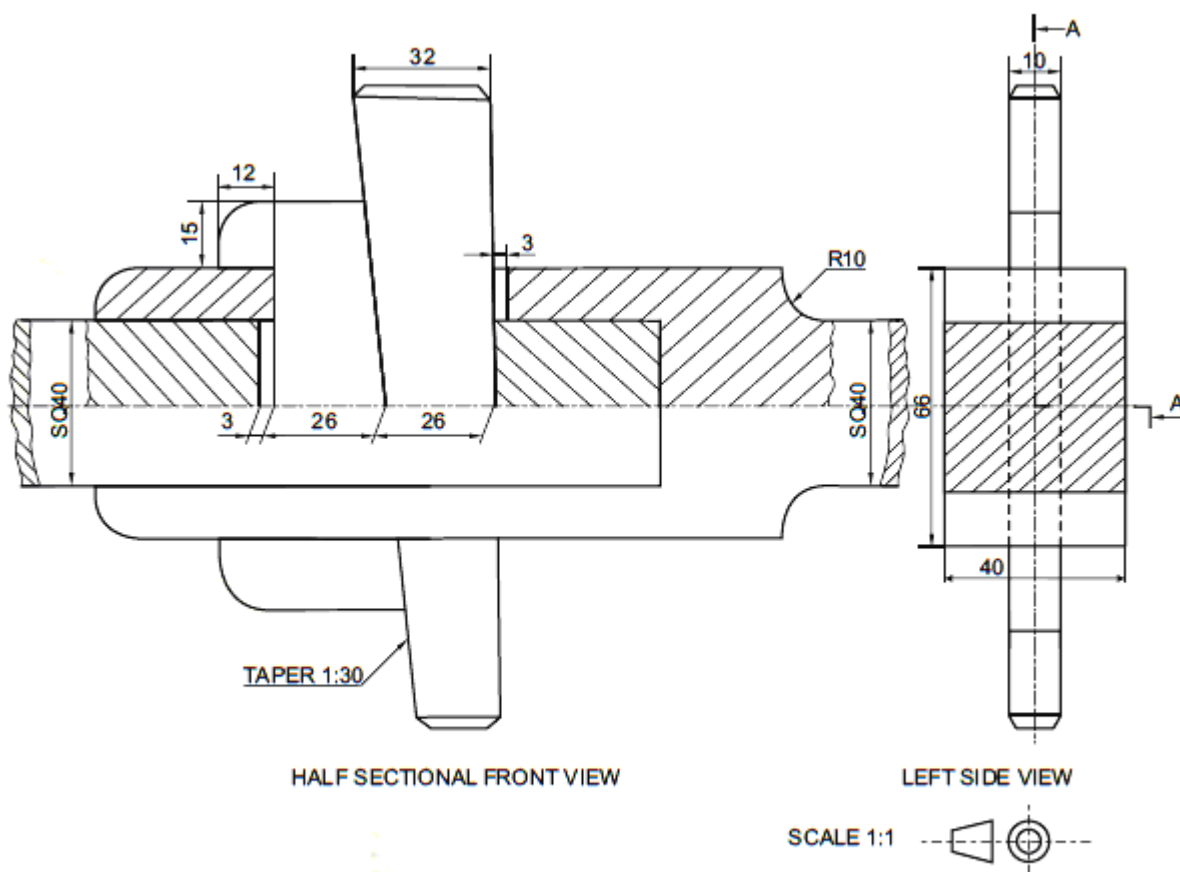
OR



TOP VIEW
 $d = 20\text{mm}$

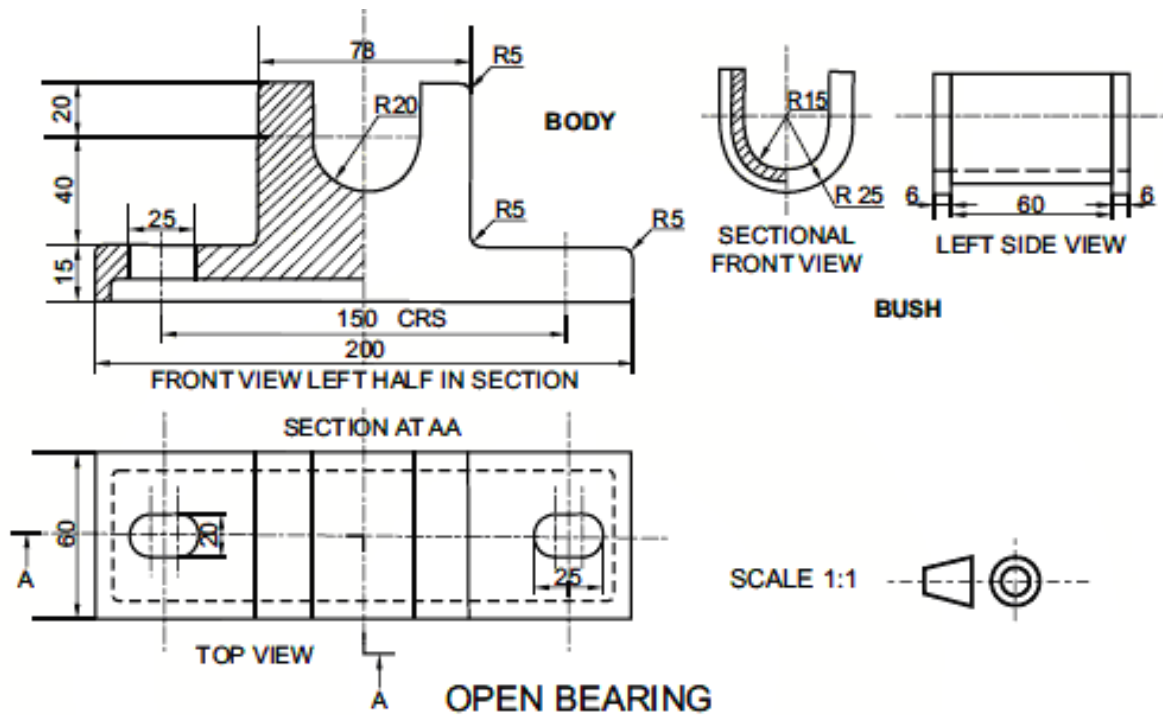
60°CSK HEAD RIVET

Q4



ASSEMBLY OF A GIB AND COTTER

OR



NOTE:- Follow the SP:46-2003(revised) codes only, to draw the solutions.