

|             |                |
|-------------|----------------|
| Paper:      | ENGG. GRAPHICS |
| Set Name:   | SET 10         |
| Exam Date:  | 11 Sep 2022    |
| Exam Shift: | 1              |
| Language:   | English        |

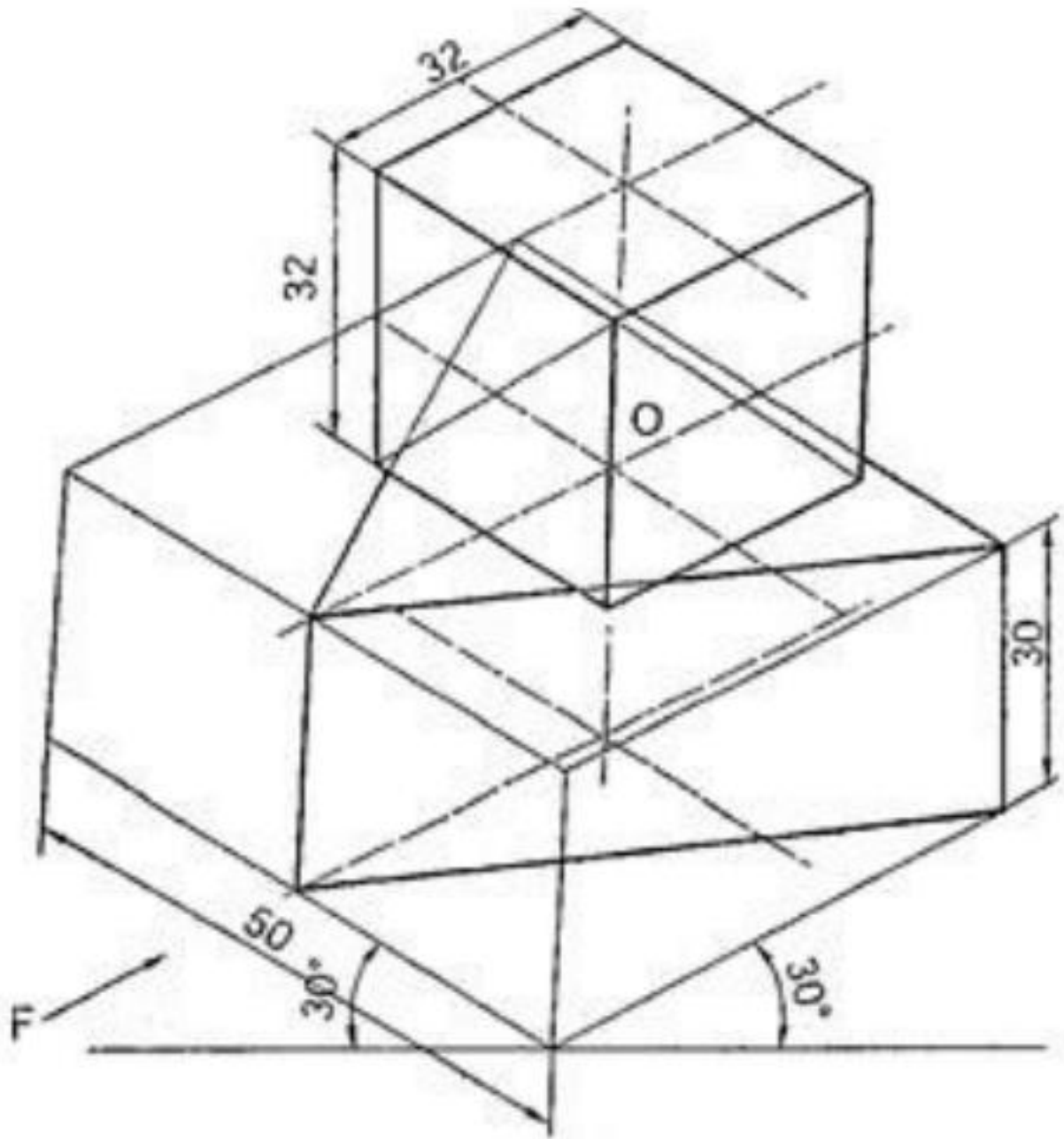
|                |                                                                                               |
|----------------|-----------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                |
| Item No:       | 1                                                                                             |
| Question ID:   | 515691                                                                                        |
| Question Type: | MCQ                                                                                           |
| Question:      | The method of Projection that is used by mathematicians and furniture manufacturers is called |
| A:             | Axonometric projection                                                                        |
| B:             | Oblique projection                                                                            |
| C:             | Perspective projection                                                                        |
| D:             | Isometric projection                                                                          |

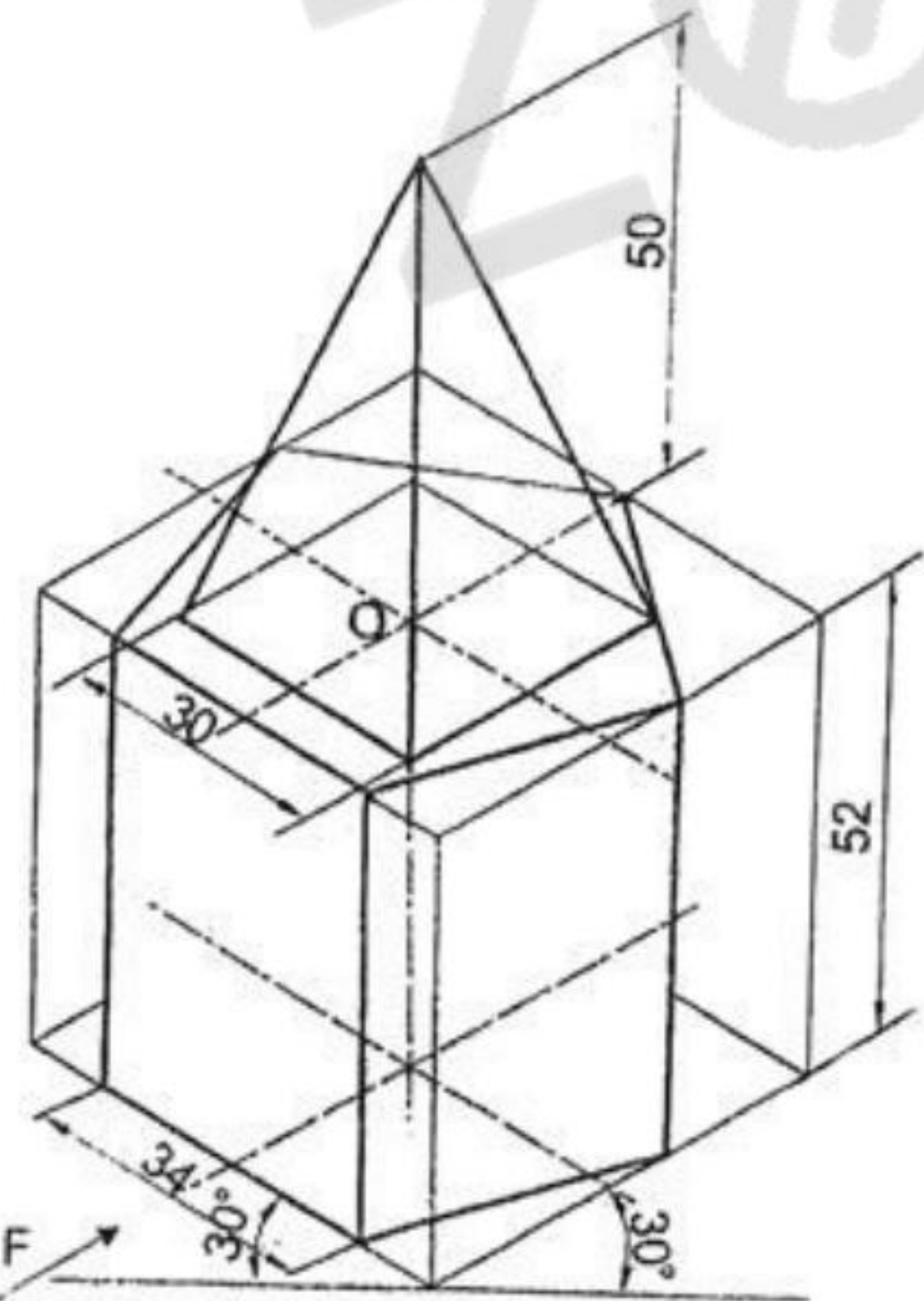
|                |                        |
|----------------|------------------------|
| Section:       | ENGG. GRAPHICS         |
| Item No:       | 2                      |
| Question ID:   | 515692                 |
| Question Type: | MCQ                    |
| Question:      | A Square pyramid has   |
| A:             | 4 rectangular faces    |
| B:             | 4 cylindrical surfaces |
| C:             | 4 triangular faces     |
| D:             | 4 square faces         |

|                |                            |
|----------------|----------------------------|
| Section:       | ENGG. GRAPHICS             |
| Item No:       | 3                          |
| Question ID:   | 515693                     |
| Question Type: | MCQ                        |
| Question:      | Isometric Scale is used in |
| A:             | Isometric drawing only     |
| B:             | Perspective view only      |
| C:             | Isometric projection only  |
| D:             | Orthographic position only |

|                |                                                           |
|----------------|-----------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                            |
| Item No:       | 4                                                         |
| Question ID:   | 515694                                                    |
| Question Type: | MCQ                                                       |
|                | Choose the correct statement from the figure given below, |

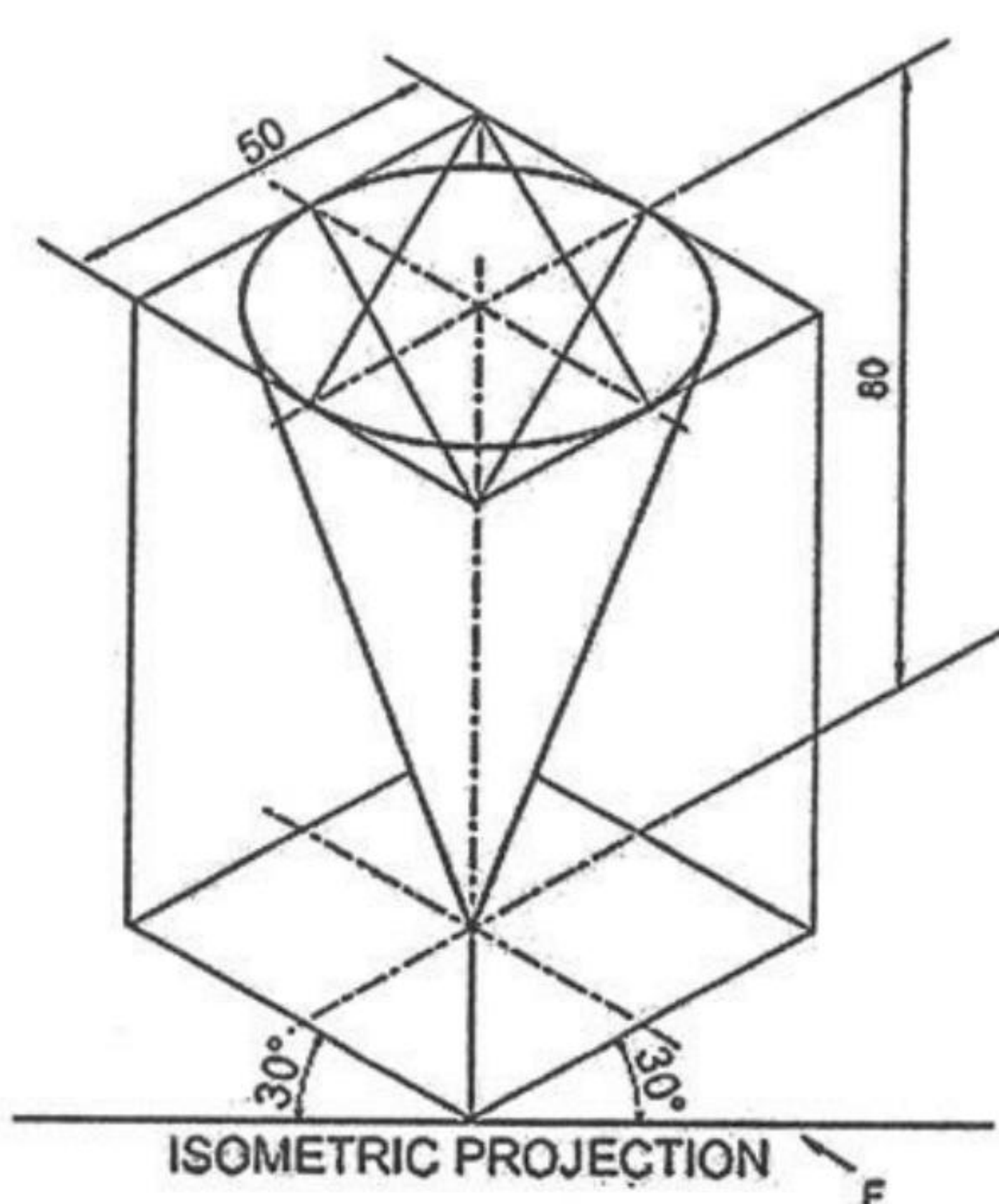


|           |                                                                                                                                          |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------|
| Question: |  <p style="text-align: center;">ISOMETRIC PROJECTION</p> |
| A:        | A triangular pyramid is resting on the HP and a Cube is resting on its rectangular surface                                               |
| B:        | Cube is resting on HP and triangular prism is resting on it                                                                              |
| C:        | Cube is resting on the triangular face of the triangular prism                                                                           |
| D:        | Axis of Cube is perpendicular to HP and the axis of triangular prism is perpendicular to VP                                              |

|                |                                                                                                                                                                                                                                                                                                |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                                                                                                                                                                                                                 |
| Item No:       | 5                                                                                                                                                                                                                                                                                              |
| Question ID:   | 515695                                                                                                                                                                                                                                                                                         |
| Question Type: | MCQ                                                                                                                                                                                                                                                                                            |
| Question:      | <p>Following figures shows the isometric projections of combination of two solids.</p> <p>In this projection, the common axis of two solids is</p>  <p style="text-align: center;">ISOMETRIC PROJECTION</p> |
| A:             | Parallel to HP                                                                                                                                                                                                                                                                                 |
| B:             | Parallel to VP                                                                                                                                                                                                                                                                                 |
| C:             | Perpendicular to VP                                                                                                                                                                                                                                                                            |
| D:             | Parallel to HP and VP                                                                                                                                                                                                                                                                          |

|                |                                                   |
|----------------|---------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                    |
| Item No:       | 6                                                 |
| Question ID:   | 515696                                            |
| Question Type: | MCQ                                               |
|                | Choose the correct statement for the given figure |



|           |                                                                                  |
|-----------|----------------------------------------------------------------------------------|
| Question: |  |
| A:        | the solid is an inverted pyramid                                                 |
| B:        | the solid is a horizontal cone                                                   |
| C:        | the solid is an inverted cone                                                    |
| D:        | the solid is a vertical cylinder                                                 |

|                |                                                                                                                   |
|----------------|-------------------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                                    |
| Item No:       | 7                                                                                                                 |
| Question ID:   | 515697                                                                                                            |
| Question Type: | MCQ                                                                                                               |
| Question:      | In an isometric projection of a horizontal cylinder with its axis perpendicular to VP, its circular faces will be |
| A:             | parallel to VP                                                                                                    |
| B:             | parallel to HP                                                                                                    |
| C:             | perpendicular to VP                                                                                               |
| D:             | parallel to HP and VP                                                                                             |

|                |                                                               |
|----------------|---------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                |
| Item No:       | 8                                                             |
| Question ID:   | 515698                                                        |
| Question Type: | MCQ                                                           |
| Question:      | The surface connecting crest and root in a thread is known as |
| A:             | Pitch                                                         |
| B:             | Thread angle                                                  |
| C:             | Flank                                                         |
| D:             | Lead                                                          |

|                |                |
|----------------|----------------|
| Section:       | ENGG. GRAPHICS |
| Item No:       | 9              |
| Question ID:   | 515699         |
| Question Type: | MCQ            |



|           |                                                                             |
|-----------|-----------------------------------------------------------------------------|
| Question: | In BSW thread profile, what will be the angle between two adjacent flanks ? |
| A:        | 60°                                                                         |
| B:        | 50°                                                                         |
| C:        | 45°                                                                         |
| D:        | 55°                                                                         |

|                |                                                                                 |
|----------------|---------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                  |
| Item No:       | 10                                                                              |
| Question ID:   | 5156910                                                                         |
| Question Type: | MCQ                                                                             |
| Question:      | Out of the following screw threads, which does not have a V-thread profile , is |
| A:             | B.S.W. thread                                                                   |
| B:             | Square thread                                                                   |
| C:             | Metric thread (external)                                                        |
| D:             | Metric thread (internal)                                                        |

|                |                                                                                        |
|----------------|----------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                         |
| Item No:       | 11                                                                                     |
| Question ID:   | 5156911                                                                                |
| Question Type: | MCQ                                                                                    |
| Question:      | Select the type of bolt that can be used in a square recess provided on the machinery; |
| A:             | Hexagonal headed bolt                                                                  |
| B:             | Square headed bolt                                                                     |
| C:             | Stud with collar                                                                       |
| D:             | Rivet with taper                                                                       |

|                |                                                                                                         |
|----------------|---------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                          |
| Item No:       | 12                                                                                                      |
| Question ID:   | 5156912                                                                                                 |
| Question Type: | MCQ                                                                                                     |
| Question:      | If 'd' is the nominal diameter of the bolt, then the thickness of the bolt head is generally taken as ; |
| A:             | 0.8d                                                                                                    |
| B:             | 0.5d                                                                                                    |
| C:             | 1.5d                                                                                                    |
| D:             | 0.6d                                                                                                    |

|                |                                                                                                              |
|----------------|--------------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                               |
| Item No:       | 13                                                                                                           |
| Question ID:   | 5156913                                                                                                      |
| Question Type: | MCQ                                                                                                          |
| Question:      | A hexagonal nut is fitted on a hexagonal headed bolt. Then what is correct about the chamfered face of nut ? |



|    |                                                             |
|----|-------------------------------------------------------------|
| A: | It is towards the head of bolt                              |
| B: | It is away from the head of bolt                            |
| C: | There is no chamfered face on the nut                       |
| D: | It may be facing towards as well as away from the bolt head |

|                |                                                                                                     |
|----------------|-----------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                      |
| Item No:       | 14                                                                                                  |
| Question ID:   | 5156914                                                                                             |
| Question Type: | MCQ                                                                                                 |
| Question:      | If D is the nominal diameter of the bolt, then the thickness of the plain washer used in it will be |
| A:             | $2D+3 \text{ mm}$                                                                                   |
| B:             | $D/8$                                                                                               |
| C:             | $D+1\text{mm}$                                                                                      |
| D:             | D                                                                                                   |

|                |                                                                                                  |
|----------------|--------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                   |
| Item No:       | 15                                                                                               |
| Question ID:   | 5156915                                                                                          |
| Question Type: | MCQ                                                                                              |
| Question:      | In the conventional representation of external threads, the broken/ incomplete circle represents |
| A:             | Chamfer circle                                                                                   |
| B:             | Root Circle                                                                                      |
| C:             | Crest Circle                                                                                     |
| D:             | Pitch Circle                                                                                     |

|                |                                                                          |
|----------------|--------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                           |
| Item No:       | 16                                                                       |
| Question ID:   | 5156916                                                                  |
| Question Type: | MCQ                                                                      |
| Question:      | A cylindrical piece of metal having threads at its both ends is known as |
| A:             | Bolt                                                                     |
| B:             | Nut                                                                      |
| C:             | Rivet                                                                    |
| D:             | Stud                                                                     |

|                |                                                                                           |
|----------------|-------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                            |
| Item No:       | 17                                                                                        |
| Question ID:   | 5156917                                                                                   |
| Question Type: | MCQ                                                                                       |
| Question:      | The diameter of the collar in collar stud ( taking 'd' as the diameter of stud ) would be |
| A:             | $1.5d$                                                                                    |



|    |      |
|----|------|
| B: | 1.6d |
| C: | 1.3d |
| D: | 1.2d |

|                |                                                               |
|----------------|---------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                |
| Item No:       | 18                                                            |
| Question ID:   | 5156918                                                       |
| Question Type: | MCQ                                                           |
| Question:      | The machine element which is a permanent fastener is known as |
| A:             | Stud                                                          |
| B:             | Rivet                                                         |
| C:             | Screw                                                         |
| D:             | Nut                                                           |

|                |                                                                                                   |
|----------------|---------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                    |
| Item No:       | 19                                                                                                |
| Question ID:   | 5156919                                                                                           |
| Question Type: | MCQ                                                                                               |
| Question:      | In Snap head rivet, radius of the arc of its head would be ( where d= nominal diameter of rivet ) |
| A:             | 0.7 d                                                                                             |
| B:             | 0.8d                                                                                              |
| C:             | 0.5d                                                                                              |
| D:             | 0.25d                                                                                             |

|                |                                                          |
|----------------|----------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                           |
| Item No:       | 20                                                       |
| Question ID:   | 5156920                                                  |
| Question Type: | MCQ                                                      |
| Question:      | The thickness of the head of the pan head rivet would be |
| A:             | 0.5d                                                     |
| B:             | 0.6d                                                     |
| C:             | 0.4d                                                     |
| D:             | 0.7d                                                     |

|                |                                                   |
|----------------|---------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                    |
| Item No:       | 21                                                |
| Question ID:   | 5156921                                           |
| Question Type: | MCQ                                               |
| Question:      | In Journal bearings, the word 'journal' refers to |
| A:             | the bush of the bearing                           |
| B:             | elongated hole in sole plate                      |
| C:             | the portion of the shaft in sleeve                |



|    |                    |
|----|--------------------|
| D: | collar of the bush |
|----|--------------------|

|                |                                                 |
|----------------|-------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                  |
| Item No:       | 22                                              |
| Question ID:   | 5156922                                         |
| Question Type: | MCQ                                             |
| Question:      | The Base/Body of the open bearing is made up of |
| A:             | Cast Iron                                       |
| B:             | Strengthened composites                         |
| C:             | Toughened Steel                                 |
| D:             | Wrought Iron                                    |

|                |                                                    |
|----------------|----------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                     |
| Item No:       | 23                                                 |
| Question ID:   | 5156923                                            |
| Question Type: | MCQ                                                |
| Question:      | The shape of the oil hole in the Bushed Bearing is |
| A:             | Of Counter disc                                    |
| B:             | Helical                                            |
| C:             | Counter sunk                                       |
| D:             | Semi cylindrical                                   |

|                |                                           |
|----------------|-------------------------------------------|
| Section:       | ENGG. GRAPHICS                            |
| Item No:       | 24                                        |
| Question ID:   | 5156924                                   |
| Question Type: | MCQ                                       |
| Question:      | A Cotter is tapered so that in its shape, |
| A:             | Only thickness decreases                  |
| B:             | Only width decreases                      |
| C:             | Both thickness and width decreases        |
| D:             | Both length and width decreases           |

|                |                                       |
|----------------|---------------------------------------|
| Section:       | ENGG. GRAPHICS                        |
| Item No:       | 25                                    |
| Question ID:   | 5156925                               |
| Question Type: | MCQ                                   |
| Question:      | Parts in sleeve and cotter joints are |
| A:             | one sleeve, three cotter, two rods    |
| B:             | two sleeve, two cotter, one rod       |
| C:             | one sleeve, two cotter, two rods      |
| D:             | one sleeve, one cotter, three rods    |

|          |                |
|----------|----------------|
| Section: | ENGG. GRAPHICS |
|----------|----------------|



|                |                                                                                                              |
|----------------|--------------------------------------------------------------------------------------------------------------|
| Item No:       | 26                                                                                                           |
| Question ID:   | 5156926                                                                                                      |
| Question Type: | MCQ                                                                                                          |
| Question:      | When a Gib is used with Cotter in Gib and Cotter joint, then the opposite faces of the slots in the rods are |
| A:             | Perpendicular to each other                                                                                  |
| B:             | Parallel to each other                                                                                       |
| C:             | Inclined at 30° with each other                                                                              |
| D:             | Inclined at 45° with each other                                                                              |

|                |                                                                     |
|----------------|---------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                      |
| Item No:       | 27                                                                  |
| Question ID:   | 5156927                                                             |
| Question Type: | MCQ                                                                 |
| Question:      | In flange pipe joint, _____ is used for making the joint leakproof. |
| A:             | Flange                                                              |
| B:             | Nut and Bolt                                                        |
| C:             | Cotter                                                              |
| D:             | Gasket                                                              |

|                |                                                                                                                               |
|----------------|-------------------------------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                                                |
| Item No:       | 28                                                                                                                            |
| Question ID:   | 5156928                                                                                                                       |
| Question Type: | MCQ                                                                                                                           |
| Question:      | For joining cables, ropes and wires of electric poles, which one of the following is used for an adjustable temporary joint ? |
| A:             | Sleeve and Cotter joint                                                                                                       |
| B:             | Flange pipe joint                                                                                                             |
| C:             | Turnbuckle ( tie-rod joint)                                                                                                   |
| D:             | Strap joint (Gib and Cotter joint)                                                                                            |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Item No:       | 29                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Question ID:   | 5156929                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Question Type: | MCQ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Question:      | <p>Arrange the sequence of construction method of drawing Front View and Top View of a square nut ( diameter of bolt =25 mm) keeping its axis vertical</p> <p>A. Draw the hidden lines and axis<br/> B. Circumscribe square around the chamfering circle<br/> C. Draw the top view, describing three circles of diameter 'd' =25 mm, 0.8d =20 mm and 1.5d = 37.5 mm respectively<br/> D. Projecting the top view, draw the front view<br/> E. Complete the faces in Front view</p> <p>Choose the correct answer from the options given below</p> |
| A:             | A, B, C, D, E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



|    |               |
|----|---------------|
| B: | C, B, D, E, A |
| C: | E, D, C, B, A |
| D: | B, A, C, D, E |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Item No:       | 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Question ID:   | 5156930                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Question Type: | MCQ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Question:      | <p>Arrange the sequence of construction methods of isometric projections of Sphere of diameter 50 mm</p> <p>A. Mark a point O in upward direction equal to 25 mm i.e. isometric length of radius of sphere from the centre of square drawn<br/> B. This drawn circle is the isometric projection of the given sphere<br/> C. Draw isometric projection of square in horizontal plane with side of it 50 mm length<br/> D. Taking this point O as a center and 25 mm as the radius, draw the circle<br/> E. Draw the center lines of this square</p> <p>Choose the correct answer from the options given below</p> |
| A:             | A, B, C, D, E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| B:             | C, E, A, D, B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| C:             | E, D, C, B, A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| D:             | D, C, B, A, E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Item No:       | 31                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Question ID:   | 5156931                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Question Type: | MCQ                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Question:      | <p>Choose the correct statements from the following</p> <p>A. In Gib and Cotter joint, two rods of square or rectangular in cross section are used<br/> B. In Gib and Cotter joint, two cotters are used<br/> C. In Gib and Cotter joint, one Gib and one cotter are used<br/> D. In Gib and Cotter joint, one cotter and two gibs are used<br/> E. In Gib and Cotter joint, two Gibs and two cotters are used</p> <p>Choose the correct answer from the options given below</p> |
| A:             | A and C Only                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| B:             | B and C Only                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| C:             | C and D Only                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| D:             | B, D and E Only                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|                |                                                                                                                                                                                            |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                                                                                                             |
| Item No:       | 32                                                                                                                                                                                         |
| Question ID:   | 5156932                                                                                                                                                                                    |
| Question Type: | MCQ                                                                                                                                                                                        |
| Question:      | <p>From the following statements, choose the correct ones</p> <p>A. Perspective projection is mostly used by mathematicians<br/> B. Oblique projections are drawn with Isometric scale</p> |



|           |                                                                                                                                                                                                                                                                                                             |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Question: | <p>C. In isometric projection, all the three angles between Principal axis are equal</p> <p>D. Isometric scale is used to make enlarged drawings</p> <p>E. Axonometric projection is used in mechanical engineering to show machine parts</p> <p>Choose the correct answer from the options given below</p> |
| A:        | A and B Only                                                                                                                                                                                                                                                                                                |
| B:        | B and C Only                                                                                                                                                                                                                                                                                                |
| C:        | C and D Only                                                                                                                                                                                                                                                                                                |
| D:        | E and C Only                                                                                                                                                                                                                                                                                                |

|                |                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                                                                                                                                                                                                                                                                                                                 |
| Item No:       | 33                                                                                                                                                                                                                                                                                                                                                                                             |
| Question ID:   | <b>5156933</b>                                                                                                                                                                                                                                                                                                                                                                                 |
| Question Type: | MCQ                                                                                                                                                                                                                                                                                                                                                                                            |
| Question:      | <p>Choose the correct statements from the following</p> <p>A. Square nut is a square prism provided with threaded hole</p> <p>B. A square nut has external thread</p> <p>C. Upper corners of a square nut are chamfered at 60°</p> <p>D. Square nut is a temporary fastener</p> <p>E. A square nut does not have chamfering</p> <p>Choose the correct answer from the options given below.</p> |
| A:             | B and C Only                                                                                                                                                                                                                                                                                                                                                                                   |
| B:             | A and D Only                                                                                                                                                                                                                                                                                                                                                                                   |
| C:             | D and E Only                                                                                                                                                                                                                                                                                                                                                                                   |
| D:             | A and C Only                                                                                                                                                                                                                                                                                                                                                                                   |

|                |                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                                                                                                                                                                                                                                                                                                                      |
| Item No:       | 34                                                                                                                                                                                                                                                                                                                                                                                                  |
| Question ID:   | <b>5156934</b>                                                                                                                                                                                                                                                                                                                                                                                      |
| Question Type: | MCQ                                                                                                                                                                                                                                                                                                                                                                                                 |
| Question:      | <p>From the following statements, choose the correct ones for an open bearing</p> <p>A. Open Bearing is a permanent joint</p> <p>B. Bush is made up of soft material</p> <p>C. Body of the bearing is rotating around shaft</p> <p>D. Body of the bearing have two elongated hole</p> <p>E. Oil hole is provided in open bearing</p> <p>Choose the correct answer from the options given below.</p> |
| A:             | B and D Only                                                                                                                                                                                                                                                                                                                                                                                        |
| B:             | D and E Only                                                                                                                                                                                                                                                                                                                                                                                        |
| C:             | B and A Only                                                                                                                                                                                                                                                                                                                                                                                        |
| D:             | C and D Only                                                                                                                                                                                                                                                                                                                                                                                        |

|                |                |
|----------------|----------------|
| Section:       | ENGG. GRAPHICS |
| Item No:       | 35             |
| Question ID:   | <b>5156935</b> |
| Question Type: | MCQ            |



|           |                                                                                                                                                                                                                                                                                                                                             |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Question: | <p>Choose the correct statement for sleeve and cotter joint</p> <p>A. Clearance is not provided in this joint<br/> B. It is a permanent joint<br/> C. It is used to connect two round rods<br/> D. Two cotters are used in this assembly<br/> E. It comprises of one gib</p> <p>Choose the correct answer from the options given below.</p> |
| A:        | A and B Only                                                                                                                                                                                                                                                                                                                                |
| B:        | B and E Only                                                                                                                                                                                                                                                                                                                                |
| C:        | C and E Only                                                                                                                                                                                                                                                                                                                                |
| D:        | C and D Only                                                                                                                                                                                                                                                                                                                                |

| Section:                | ENGG. GRAPHICS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |                      |                         |  |    |               |    |                      |    |                |     |      |    |                 |      |     |    |                 |     |                    |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------------------|-------------------------|--|----|---------------|----|----------------------|----|----------------|-----|------|----|-----------------|------|-----|----|-----------------|-----|--------------------|
| Item No:                | 36                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                         |                      |                         |  |    |               |    |                      |    |                |     |      |    |                 |      |     |    |                 |     |                    |
| Question ID:            | 5156936                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                         |                      |                         |  |    |               |    |                      |    |                |     |      |    |                 |      |     |    |                 |     |                    |
| Question Type:          | MCQ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                         |                      |                         |  |    |               |    |                      |    |                |     |      |    |                 |      |     |    |                 |     |                    |
| Question:               | <p>Match List I with List II</p> <table><thead><tr><th colspan="2">LIST I<br/>(Thread Type)</th><th colspan="2">LIST II<br/>(Their Uses)</th></tr></thead><tbody><tr><td>A.</td><td>Square thread</td><td>I.</td><td>Neck of glass bottle</td></tr><tr><td>B.</td><td>Knuckle thread</td><td>II.</td><td>Stud</td></tr><tr><td>C.</td><td>External thread</td><td>III.</td><td>Nut</td></tr><tr><td>D.</td><td>Internal thread</td><td>IV.</td><td>Power transmission</td></tr></tbody></table> <p>Choose the correct answer from the options given below</p> | LIST I<br>(Thread Type) |                      | LIST II<br>(Their Uses) |  | A. | Square thread | I. | Neck of glass bottle | B. | Knuckle thread | II. | Stud | C. | External thread | III. | Nut | D. | Internal thread | IV. | Power transmission |
| LIST I<br>(Thread Type) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | LIST II<br>(Their Uses) |                      |                         |  |    |               |    |                      |    |                |     |      |    |                 |      |     |    |                 |     |                    |
| A.                      | Square thread                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | I.                      | Neck of glass bottle |                         |  |    |               |    |                      |    |                |     |      |    |                 |      |     |    |                 |     |                    |
| B.                      | Knuckle thread                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | II.                     | Stud                 |                         |  |    |               |    |                      |    |                |     |      |    |                 |      |     |    |                 |     |                    |
| C.                      | External thread                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | III.                    | Nut                  |                         |  |    |               |    |                      |    |                |     |      |    |                 |      |     |    |                 |     |                    |
| D.                      | Internal thread                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | IV.                     | Power transmission   |                         |  |    |               |    |                      |    |                |     |      |    |                 |      |     |    |                 |     |                    |
| A:                      | A-I, B-II, C-IV, D-III                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                         |                      |                         |  |    |               |    |                      |    |                |     |      |    |                 |      |     |    |                 |     |                    |
| B:                      | A-IV, B-I, C-II, D-III                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                         |                      |                         |  |    |               |    |                      |    |                |     |      |    |                 |      |     |    |                 |     |                    |
| C:                      | A-III, B-I, C-IV, D-II                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                         |                      |                         |  |    |               |    |                      |    |                |     |      |    |                 |      |     |    |                 |     |                    |
| D:                      | A-IV, B-III, C-I, D-II                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                         |                      |                         |  |    |               |    |                      |    |                |     |      |    |                 |      |     |    |                 |     |                    |

|                                                        |                                           |                         |                                                          |                        |
|--------------------------------------------------------|-------------------------------------------|-------------------------|----------------------------------------------------------|------------------------|
| Section:                                               | ENGG. GRAPHICS                            |                         |                                                          |                        |
| Item No:                                               | 37                                        |                         |                                                          |                        |
| Question ID:                                           | 5156937                                   |                         |                                                          |                        |
| Question Type:                                         | MCQ                                       |                         |                                                          |                        |
| Question:                                              | Match List I with List II                 |                         |                                                          |                        |
|                                                        | <b>LIST I</b><br><b>(Projection Type)</b> |                         | <b>LIST II</b><br><b>(Application/Use of Projection)</b> |                        |
|                                                        | A.                                        | Perspective Projection  | I.                                                       | Mathematician          |
|                                                        | B.                                        | Oblique Projection      | II.                                                      | Mechanical Engineering |
|                                                        | C.                                        | Orthographic Projection | III.                                                     | Artist                 |
|                                                        | D.                                        | Isometric Projection    | IV.                                                      | Multiview Projection   |
| Choose the correct answer from the options given below |                                           |                         |                                                          |                        |
| A:                                                     | A-III, B-I, C-IV, D-II                    |                         |                                                          |                        |
| B:                                                     | A-I, B-II, C-IV, D-III                    |                         |                                                          |                        |
| C:                                                     | A-II, B-I, C-III, D-IV                    |                         |                                                          |                        |
| D:                                                     | A-IV, B-III, C-I, D-IV                    |                         |                                                          |                        |



|                                                        |                                             |                         |                                         |                         |
|--------------------------------------------------------|---------------------------------------------|-------------------------|-----------------------------------------|-------------------------|
| Section:                                               | ENGG. GRAPHICS                              |                         |                                         |                         |
| Item No:                                               | 38                                          |                         |                                         |                         |
| Question ID:                                           | 5156938                                     |                         |                                         |                         |
| Question Type:                                         | MCQ                                         |                         |                                         |                         |
| Question:                                              | Match List I with List II                   |                         |                                         |                         |
|                                                        | <b>LIST I</b><br><b>(Machine Assembly )</b> |                         | <b>LIST II</b><br><b>(Application )</b> |                         |
|                                                        | A.                                          | Sleeve and Cotter joint | I.                                      | Steam engine            |
|                                                        | B.                                          | Flange pipe joint       | II.                                     | In electric poles       |
|                                                        | C.                                          | Turnbuckle joint        | III.                                    | Gas pipe-line           |
|                                                        | D.                                          | Gib and Cotter joint    | IV.                                     | Tractor and its trolley |
| Choose the correct answer from the options given below |                                             |                         |                                         |                         |
| A:                                                     | A-IV, B-III, C-II, D-I                      |                         |                                         |                         |
| B:                                                     | A-I, B-II, C-III, D-IV                      |                         |                                         |                         |
| C:                                                     | A-II, B-III, C-I, D-IV                      |                         |                                         |                         |
| D:                                                     | A-III, B-II, C-IV, D-I                      |                         |                                         |                         |

|                                                        |                                         |                  |                                           |                          |
|--------------------------------------------------------|-----------------------------------------|------------------|-------------------------------------------|--------------------------|
| Section:                                               | ENGG. GRAPHICS                          |                  |                                           |                          |
| Item No:                                               | 39                                      |                  |                                           |                          |
| Question ID:                                           | 5156939                                 |                  |                                           |                          |
| Question Type:                                         | MCQ                                     |                  |                                           |                          |
| Question:                                              | Match List I with List II               |                  |                                           |                          |
|                                                        | <b>LIST I</b><br><b>(Machine Parts)</b> |                  | <b>LIST II</b><br><b>(Their Assembly)</b> |                          |
|                                                        | A.                                      | Bush with collar | I.                                        | Strap Joint              |
|                                                        | B.                                      | Gasket           | II.                                       | Open bearing             |
|                                                        | C.                                      | Gib              | III.                                      | Sleeve and Cotter joints |
|                                                        | D.                                      | Two Cotters      | IV.                                       | Flange pipe joint        |
| Choose the correct answer from the options given below |                                         |                  |                                           |                          |
| A:                                                     | A-II, B-IV, C-I, D-III                  |                  |                                           |                          |
| B:                                                     | A-III, B-IV, C-I, D-II                  |                  |                                           |                          |
| C:                                                     | A-II, B-III, C-I, D-IV                  |                  |                                           |                          |
| D:                                                     | A-IV, B-II, C-I, D-III                  |                  |                                           |                          |

|                |                                        |                                             |                            |              |
|----------------|----------------------------------------|---------------------------------------------|----------------------------|--------------|
| Section:       | ENGG. GRAPHICS                         |                                             |                            |              |
| Item No:       | 40                                     |                                             |                            |              |
| Question ID:   | 5156940                                |                                             |                            |              |
| Question Type: | MCQ                                    |                                             |                            |              |
| Question:      | Match List I with List II              |                                             |                            |              |
|                | LIST I<br>(Machine Parts, Description) |                                             | LIST II<br>(Name of Parts) |              |
|                | A.                                     | Circular metallic plate with hole at centre | I.                         | Gasket       |
|                | B.                                     | U shaped gunmetal part                      | II.                        | Plain washer |
|                |                                        |                                             |                            |              |



|                                                        |                                              |                          |
|--------------------------------------------------------|----------------------------------------------|--------------------------|
|                                                        | C. Circular rubber plate with hole at centre | III. Sleeve              |
|                                                        | D. Hollow cylindrical pipe                   | IV. Bush of open bearing |
| Choose the correct answer from the options given below |                                              |                          |
| A:                                                     | A-III, B-I, C-IV, D-II                       |                          |
| B:                                                     | A-IV, B-II, C-III, D-I                       |                          |
| C:                                                     | A-II, B-IV, C-I, D-III                       |                          |
| D:                                                     | A-I, B-II, C-III, D-IV                       |                          |

|                |                                                                                                                                                                                                                                                                                                                                      |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                                                                                                                                                                                                                                                       |
| Item No:       | 41                                                                                                                                                                                                                                                                                                                                   |
| Question ID:   | 5156941                                                                                                                                                                                                                                                                                                                              |
| Question Type: | MCQ                                                                                                                                                                                                                                                                                                                                  |
| Passage:       | <p>The bureau of Indian Standards (BIS) has recommended the adoption of ISO (International Organisation of Standardisation) recommended profile with the metric screw thread system. In General, this Iso-metric thread is specified using the basic designation.</p> <p>Answer the following questions based on Metric threads.</p> |
| Question:      | In Metric thread M 20 X 1.5 means                                                                                                                                                                                                                                                                                                    |
| A:             | The major diameter of the metric thread is 1.5 mm and pitch is 20 mm                                                                                                                                                                                                                                                                 |
| B:             | The major diameter of the metric thread is 20 mm and pitch is 1.5 mm                                                                                                                                                                                                                                                                 |
| C:             | The major diameter of the metric thread is 3 mm and pitch is 20 mm                                                                                                                                                                                                                                                                   |
| D:             | The major diameter of the metric thread is 20 mm and pitch is 3 mm                                                                                                                                                                                                                                                                   |

|                |                                                                                                                                                                                                                                                                                                                                      |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                                                                                                                                                                                                                                                       |
| Item No:       | 42                                                                                                                                                                                                                                                                                                                                   |
| Question ID:   | 5156942                                                                                                                                                                                                                                                                                                                              |
| Question Type: | MCQ                                                                                                                                                                                                                                                                                                                                  |
| Passage:       | <p>The bureau of Indian Standards (BIS) has recommended the adoption of ISO (International Organisation of Standardisation) recommended profile with the metric screw thread system. In General, this Iso-metric thread is specified using the basic designation.</p> <p>Answer the following questions based on Metric threads.</p> |
| Question:      | What will be the relationship between the pitch (P) and the gap between Crest and Root of the thread (d)                                                                                                                                                                                                                             |
| A:             | $d = 0.64P$                                                                                                                                                                                                                                                                                                                          |
| B:             | $d = 0.96P$                                                                                                                                                                                                                                                                                                                          |
| C:             | $d = 0.61P$                                                                                                                                                                                                                                                                                                                          |
| D:             | $d = 0.866P$                                                                                                                                                                                                                                                                                                                         |

|                |                                                                                                                                                       |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                                                                        |
| Item No:       | 43                                                                                                                                                    |
| Question ID:   | 5156943                                                                                                                                               |
| Question Type: | MCQ                                                                                                                                                   |
|                | The bureau of Indian Standards (BIS) has recommended the adoption of ISO (International Organisation of Standardisation) recommended profile with the |



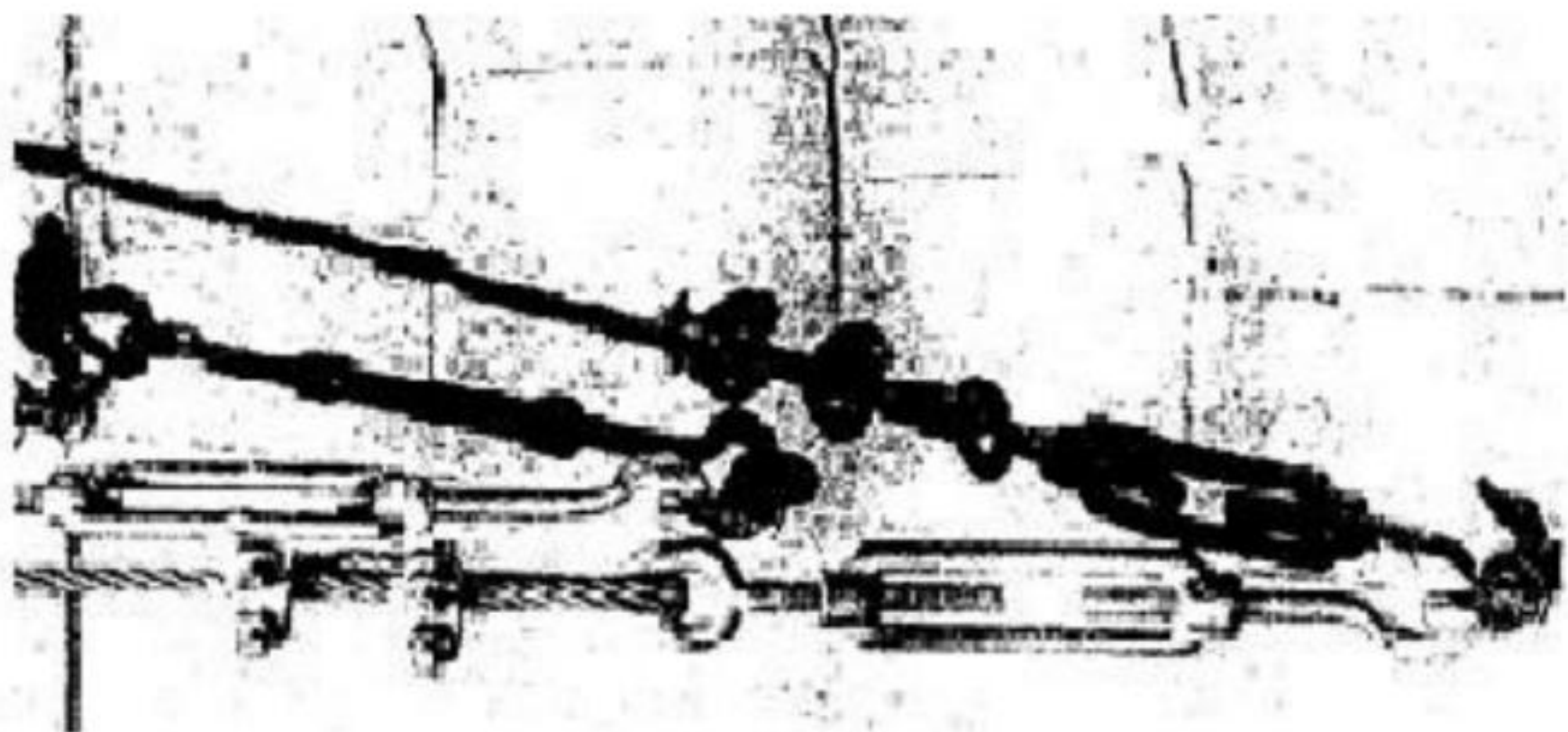
|           |                                                                                                                                                                         |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Passage:  | metric screw thread system. In General, this Iso-metric thread is specified using the basic designation.<br><br>Answer the following questions based on Metric threads. |
| Question: | In metric thread, the external and internal thread is also called                                                                                                       |
| A:        | Standard thread                                                                                                                                                         |
| B:        | Unified thread                                                                                                                                                          |
| C:        | B S W thread                                                                                                                                                            |
| D:        | Knuckle thread                                                                                                                                                          |

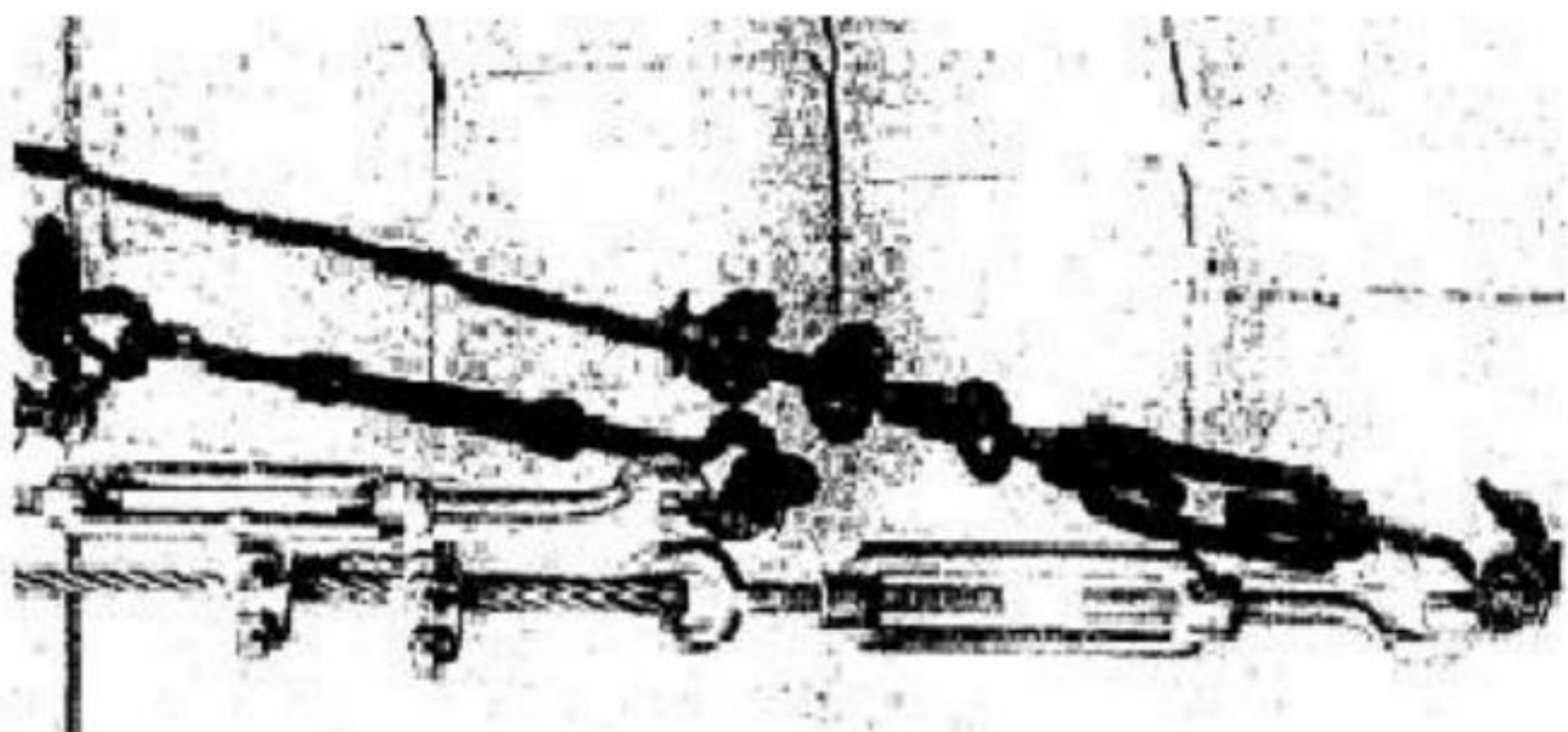
|                |                                                                                                                                                                                                                                                                                                                               |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                                                                                                                                                                                                                                                |
| Item No:       | 44                                                                                                                                                                                                                                                                                                                            |
| Question ID:   | <a href="#">5156944</a>                                                                                                                                                                                                                                                                                                       |
| Question Type: | MCQ                                                                                                                                                                                                                                                                                                                           |
| Passage:       | The bureau of Indian Standards (BIS) has recommended the adoption of ISO (International Organisation of Standardisation) recommended profile with the metric screw thread system. In General, this Iso-metric thread is specified using the basic designation.<br><br>Answer the following questions based on Metric threads. |
| Question:      | It pitch (P) of the thread is 5 mm then what will be the axial movement by one complete rotation of double start thread ?                                                                                                                                                                                                     |
| A:             | 25 mm                                                                                                                                                                                                                                                                                                                         |
| B:             | 15 mm                                                                                                                                                                                                                                                                                                                         |
| C:             | 10 mm                                                                                                                                                                                                                                                                                                                         |
| D:             | 5 mm                                                                                                                                                                                                                                                                                                                          |

|                |                                                                                                                                                                                                                                                                                                                               |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                                                                                                                                                                                                                                                |
| Item No:       | 45                                                                                                                                                                                                                                                                                                                            |
| Question ID:   | <a href="#">5156945</a>                                                                                                                                                                                                                                                                                                       |
| Question Type: | MCQ                                                                                                                                                                                                                                                                                                                           |
| Passage:       | The bureau of Indian Standards (BIS) has recommended the adoption of ISO (International Organisation of Standardisation) recommended profile with the metric screw thread system. In General, this Iso-metric thread is specified using the basic designation.<br><br>Answer the following questions based on Metric threads. |
| Question:      | Angle between two adjacent flanks in metric thread is                                                                                                                                                                                                                                                                         |
| A:             | 30°                                                                                                                                                                                                                                                                                                                           |
| B:             | 55°                                                                                                                                                                                                                                                                                                                           |
| C:             | 90°                                                                                                                                                                                                                                                                                                                           |
| D:             | 60°                                                                                                                                                                                                                                                                                                                           |

|                |                                                                                                                                                                 |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                                                                                  |
| Item No:       | 46                                                                                                                                                              |
| Question ID:   | <a href="#">5156946</a>                                                                                                                                         |
| Question Type: | MCQ                                                                                                                                                             |
|                | While going to the market, I saw an electrician repairing high power electric transmission line. He was tightening the wires with the help of a Turnbuckle. Its |

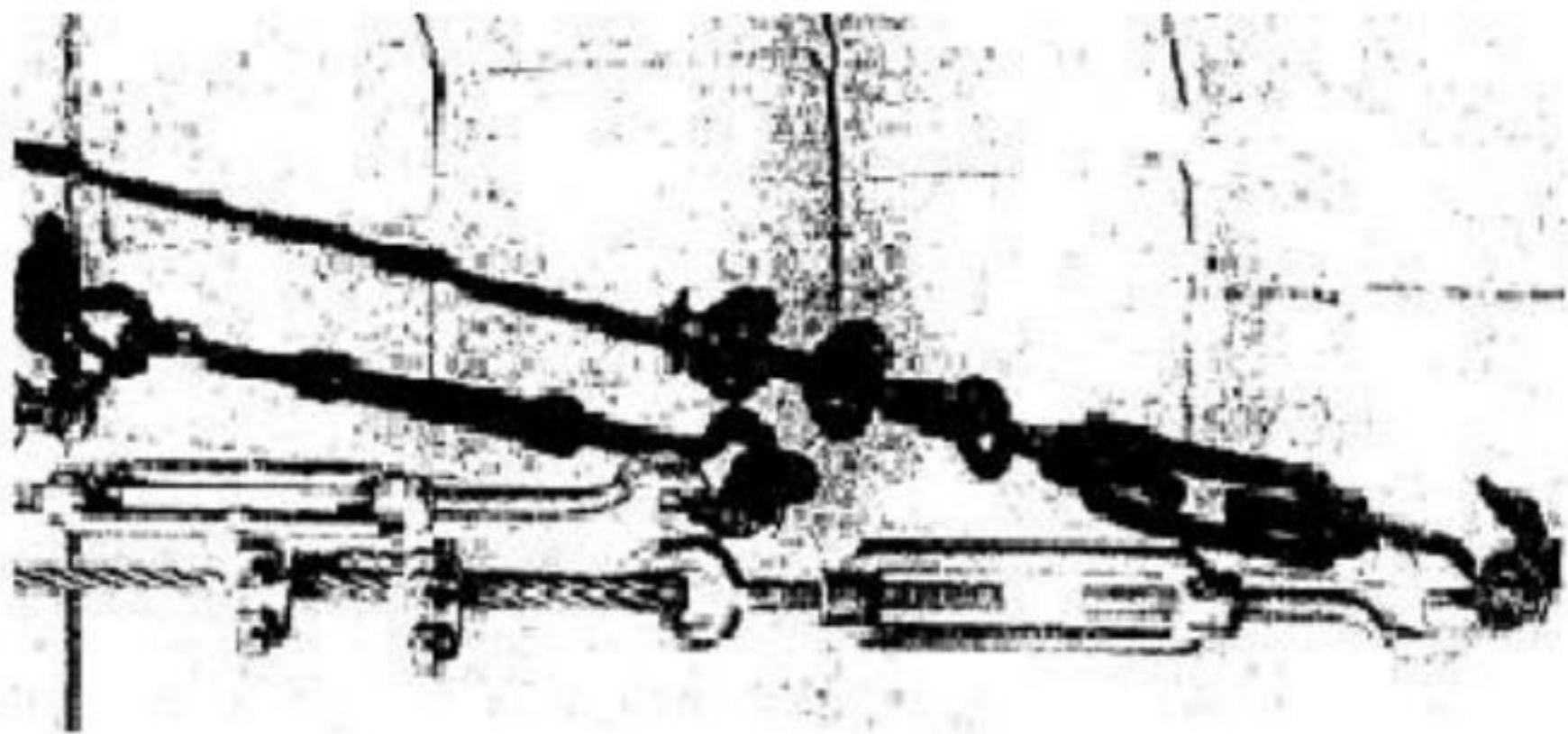


|           |                                                                                                                                                                          |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Passage:  | the body has threaded holes with opposite internal screw threads profiles, Right handed (RH) thread at one end and left hand (LH) thread at the other.                   |
|           |  <p>Based on above case study, answer the following question about the turn buckle</p> |
| Question: | The body of the turnbuckle was _____ in shape at the center                                                                                                              |
| A:        | Rectangular                                                                                                                                                              |
| B:        | Triangular                                                                                                                                                               |
| C:        | Cylindrical                                                                                                                                                              |
| D:        | Conical                                                                                                                                                                  |

|                |                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section:       | ENGG. GRAPHICS                                                                                                                                                                                                                                                                                                                                                                                             |
| Item No:       | 47                                                                                                                                                                                                                                                                                                                                                                                                         |
| Question ID:   | 5156947                                                                                                                                                                                                                                                                                                                                                                                                    |
| Question Type: | MCQ                                                                                                                                                                                                                                                                                                                                                                                                        |
| Passage:       | While going to the market, I saw an electrician repairing high power electric transmission line. He was tightening the wires with the help of a Turnbuckle. Its central portion has a slot for tightening and loosening of rod. Each tapered end of the body has threaded holes with opposite internal screw threads profiles, Right handed (RH) thread at one end and left hand (LH) thread at the other. |
|                |  <p>Based on above case study, answer the following question about the turn buckle</p>                                                                                                                                                                                                                                 |
| Question:      | Turnbuckle is also called as                                                                                                                                                                                                                                                                                                                                                                               |
| A:             | Pin joint                                                                                                                                                                                                                                                                                                                                                                                                  |
| B:             | Cotter joint                                                                                                                                                                                                                                                                                                                                                                                               |
| C:             | Pipe joint                                                                                                                                                                                                                                                                                                                                                                                                 |
| D:             | Tie rod joint                                                                                                                                                                                                                                                                                                                                                                                              |

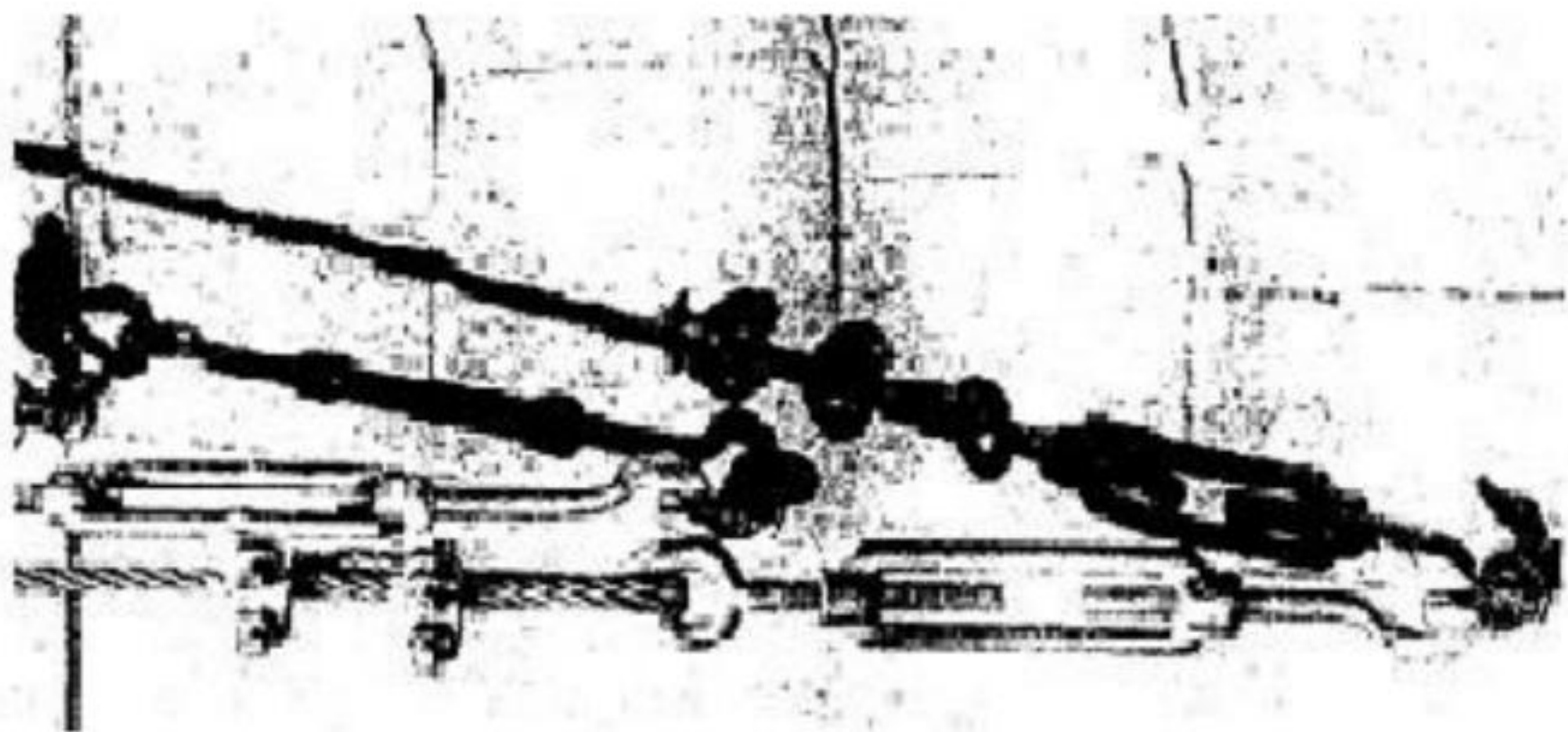
|                |                |
|----------------|----------------|
| Section:       | ENGG. GRAPHICS |
| Item No:       | 48             |
| Question ID:   | 5156948        |
| Question Type: | MCQ            |



|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Passage: | <p>While going to the market, I saw an electrician repairing high power electric transmission line. He was tightening the wires with the help of a Turnbuckle. Its central portion has a slot for tightening and loosening of rod. Each tapered end of the body has threaded holes with opposite internal screw threads profiles, Right handed (RH) thread at one end and left hand (LH) thread at the other.</p>  <p>Based on above case study, answer the following question about the turn buckle</p> |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|           |                                       |
|-----------|---------------------------------------|
| Question: | Turnbuckle joint is not used in _____ |
| A:        | Water pipe                            |
| B:        | In cables/guy wires                   |
| C:        | In electric poles                     |
| D:        | In boxing rings                       |

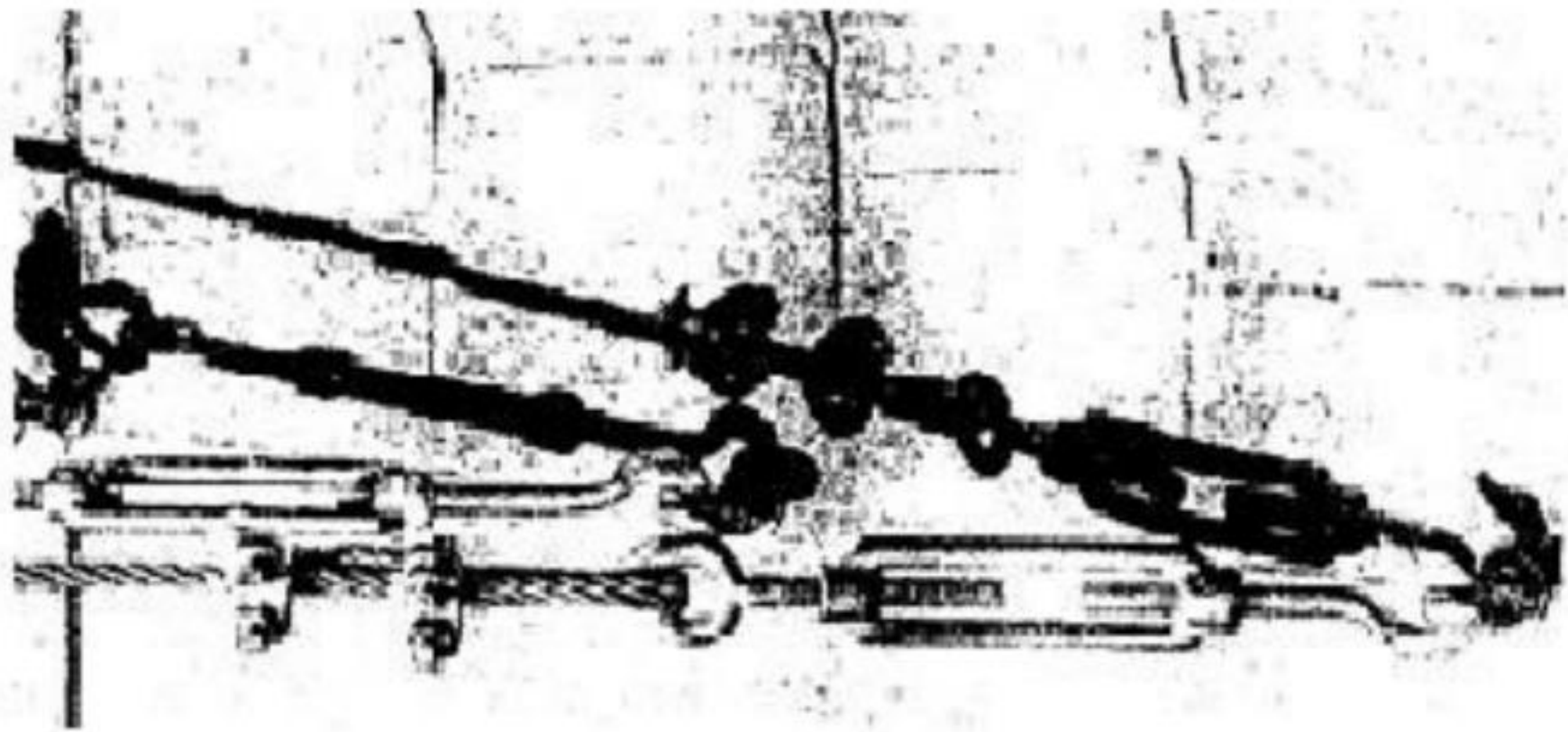
|                |                |
|----------------|----------------|
| Section:       | ENGG. GRAPHICS |
| Item No:       | 49             |
| Question ID:   | 5156949        |
| Question Type: | MCQ            |

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Passage: | <p>While going to the market, I saw an electrician repairing high power electric transmission line. He was tightening the wires with the help of a Turnbuckle. Its central portion has a slot for tightening and loosening of rod. Each tapered end of the body has threaded holes with opposite internal screw threads profiles, Right handed (RH) thread at one end and left hand (LH) thread at the other.</p>  <p>Based on above case study, answer the following question about the turn buckle</p> |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|           |                                                                |
|-----------|----------------------------------------------------------------|
| Question: | The tapered ends of the turnbuckle resemble the shape of _____ |
| A:        | Frustum of triangular pyramid                                  |
| B:        | Frustum of cone                                                |
| C:        | Square prism                                                   |
| D:        | Hexagonal prism                                                |

|          |                |
|----------|----------------|
| Section: | ENGG. GRAPHICS |
| Item No: | 50             |



|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Question ID:   | 5156950                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Question Type: | MCQ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Passage:       | <p>While going to the market, I saw an electrician repairing high power electric transmission line. He was tightening the wires with the help of a Turnbuckle. Its central portion has a slot for tightening and loosening of rod. Each tapered end of the body has threaded holes with opposite internal screw threads profiles, Right handed (RH) thread at one end and left hand (LH) thread at the other.</p>  <p>Based on above case study, answer the following question about the turn buckle</p> |
| Question:      | Turnbuckle joint is a _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| A:             | Permanent joint                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| B:             | Temporary joint                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| C:             | Leakproof joint                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| D:             | Welded joint                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |