



ROLL NUMBER				
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SET	A
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INDIAN SCHOOL MUSCAT
HALF YEARLY EXAMINATION 2023
ENGINEERING GRAPHICS (046)



CLASS : XII

DATE: 12-09-2023

TIME ALLOTTED : 3 HRS.

MAXIMUM MARKS: 70

GENERAL INSTRUCTIONS:

- (i) Attempt all the questions.
 - (ii) Use both sides of the drawing sheet, if necessary.
 - (iii) All dimensions are in millimeters.
 - (iv) Follow the SP: 46 2003 revised codes. (With first angle method of projection)
 - (v) Missing and mismatching dimensions, if any, may be suitably assumed.
 - (vi) In no view of Question 22, are hidden edges or lines required.
 - (vii) In Question 24, hidden edges or lines are to be shown in view without section.
1. The Isometric view of a vertical line is represented at an angle of _____ in front view 1
and having a length _____ the original length of the line.
- a) 30°, same as.
 - b) 30°, less than
 - c) 90°, same as
 - d) 90°, less than
2. What do hidden lines in orthographic projections denote? 1
- a) Holes or slots.
 - b) Change of planes.
 - c) Position of cut.
 - d) Centre of a circle or cylinder
3. The isometric projection of 90 mm line is _____ mm. 1
- a) $30 \times \frac{1}{2}$
 - b) $30 \times \frac{3}{4}$
 - c) $30 \times \frac{1}{2}$
 - d) None of the above.
4. The Isometric projection of a horizontal line is represented at an angle of _____ in front 1

view and having a length _____ the original length of the line.

- e) 30° , same as.
- f) 30° , less than
- g) 90° , same as
- h) 90° , less than

5. Mechanisms of machine tools, valves, spindles, vice screws etc., are generally provided with _____ threads? 1

- a) Square thread.
- b) Knuckle thread.
- c) BSW thread.
- d) Metric thread.

6. The nomenclature SQ 40*4 stands for _____. 1

- a) Square thread; Nominal diameter = 40 mm; Pitch = 4 mm.
- b) Square thread; Pitch = 40 mm; Nominal diameter = 4mm.
- c) Metric thread; Nominal diameter = 40 mm; Pitch = 4mm.
- d) B.S.W thread; Nominal diameter = 40 mm; Pitch = 4mm.

7. Which of the following is not a use of knuckle thread? 1

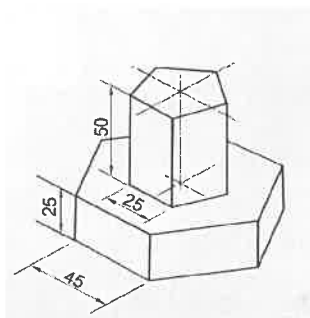
- a) It is used in railway carriage coupling screws.
- b) It is used on the neck of glass bottles.
- c) It is used on the old electric bulbs.
- d) It is the best choice for mechanical power transmission.

8. Which one of the following is a permanent fastener? 1

- a) Rivet.
- b) Nut-Bolt.
- c) Screw.
- d) Stud.

Q. 9 to Q. 14 select the correct option corresponding to the orientations of the given Isometric projection :

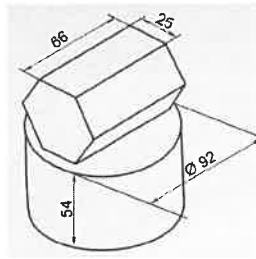
9. 1



- a) The top solid is square prism and the bottom solid is triangular prism.

- b) The top solid is pentagonal prism and the bottom solid is hexagonal slab
- c) Both the solids are hexagonal prisms.
- d) Both the solids are pentagonal prisms.

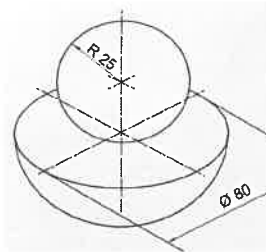
10.



1

- a) A pentagonal prism is kept centrally on the top surface of a cylinder with rectangular faces on it.
- b) A hexagonal prism is kept centrally on the top circular surface of a cylinder with its rectangular faces on it.
- c) A hexagonal pyramid is kept centrally on the top rectangular face of a hexagonal prism with its triangular faces on it.
- d) A hexagonal prism is kept centrally on the top of a cylinder with its hexagonal face on it.

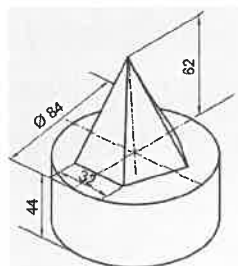
11.



1

- a) The isometric projection of a sphere is a circle whose diameter is equal to the isometric diameter of the sphere.
- b) The isometric projection of a sphere is a circle whose diameter is equal to the true diameter of the sphere.
- c) The isometric projection of a sphere is a circle whose diameter is equal to half of the true diameter of the sphere.
- d) The isometric projection of a sphere is a circle whose diameter is equal to double of the true diameter of the sphere.

12.



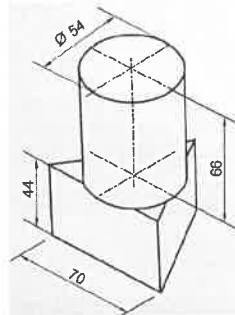
1

- a) A vertical square pyramid is kept on a vertical circular disc.
- b) A vertical triangular pyramid is kept on a vertical square slab.

- c) A vertical square pyramid is kept on a vertical square slab.
- d) A vertical pentagonal pyramid is kept on a vertical circular disc.

13.

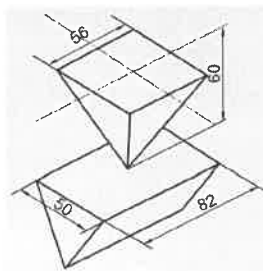
1



- a) A vertical cylinder of base diameter 54 mm is placed centrally on a hexagonal prism which is resting on HP with one of its long edges.
- b) A vertical cylinder of base diameter 54 mm is placed centrally on a triangular prism which is resting on HP with one of its triangular faces.
- c) A vertical cylinder of base diameter 54 mm is placed centrally on a pentagonal prism which is resting on HP with one of its rectangular faces.
- d) A vertical cylinder of base diameter 54 mm is placed centrally on a hexagonal prism which is resting on HP with one of its rectangular faces.

14.

1



- a). An inverted square pyramid is kept on a horizontal triangular prism
- b) A vertical triangular pyramid is kept on a vertical square slab.
- c) A vertical square pyramid is kept on a vertical square slab.
- d) A vertical triangular pyramid is kept on a vertical circular disc.

TWO STATEMENTS ARE GIVEN – ONE LABELLED ASSERTION (A) AND THE OTHER LABELLED REASON (R). SELECT THE CORRECT ANSWER TO THE FOLLOWING QUESTIONS FROM THE CODES (a), (b), (c) AND (d) AS GIVEN BELOW:

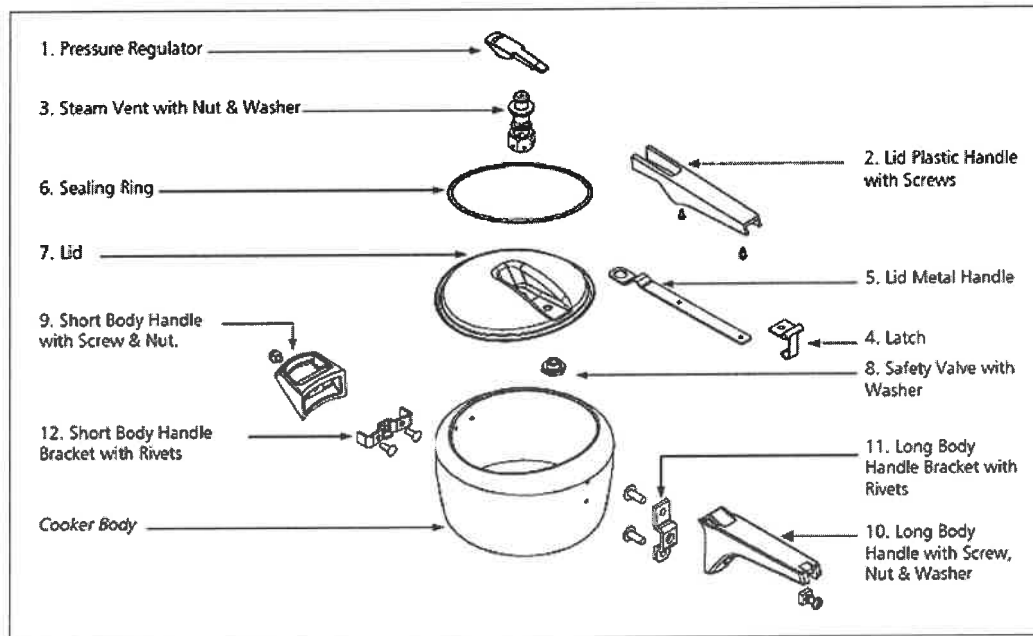
- a) Both A and R is true and R is the correct explanation of A.
- b) Both A and R is true and R is not the correct explanation of A.
- C) A is true but R is false.
- d) A is false and R is also false.

- 15. A: Mechanisms of machine tools, valves, spindles, vice screws etc. are generally provided with square threads.

1

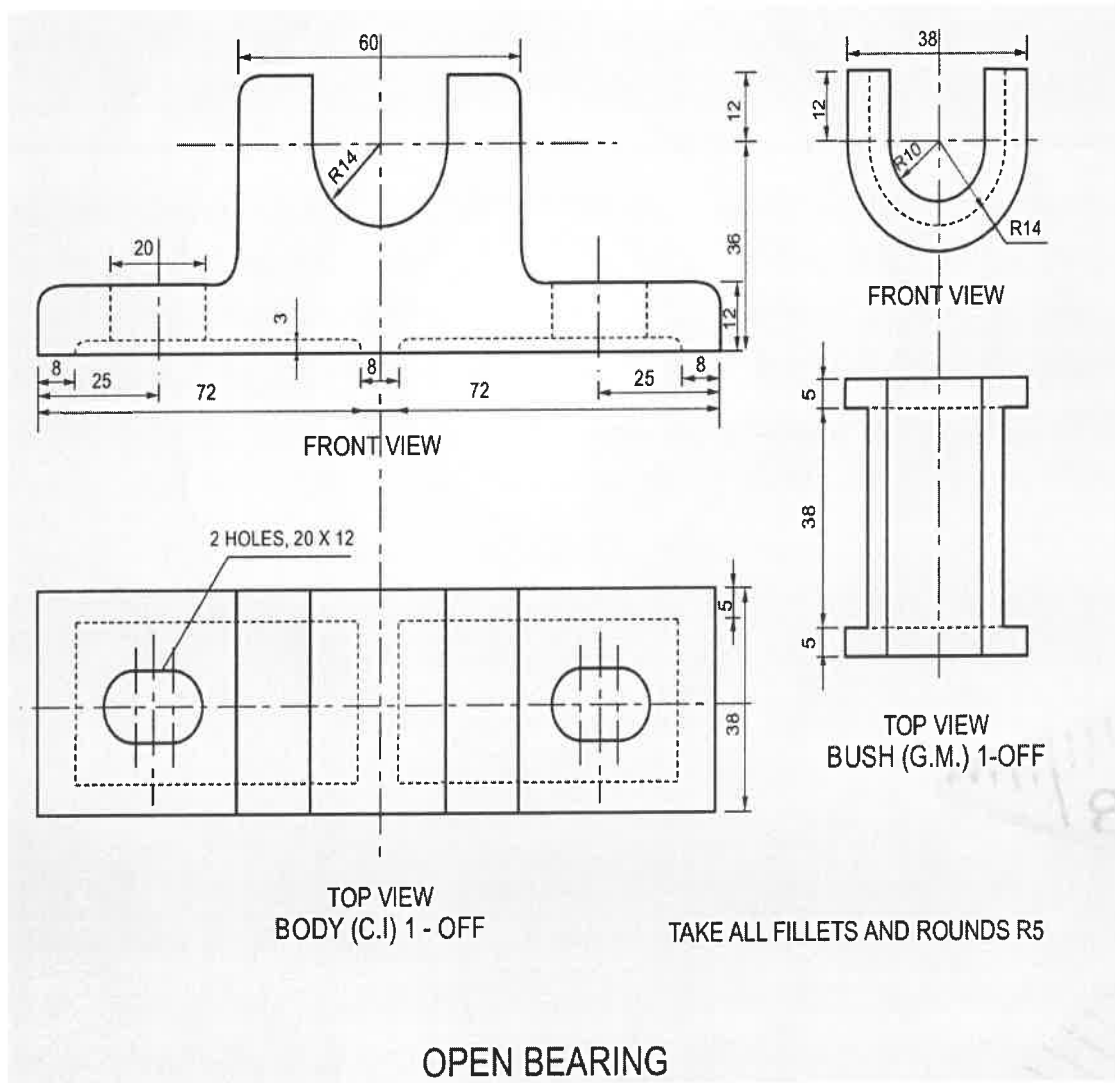
R: Square threads are used in the neck of glass bottles.

Q. 16 to Q. 20 Read the paragraph given below and answer the following questions.



16. The process of joining different machine parts is called as 1
- a) Fastening.
 - b) Screw threads.
 - c) Crest
 - d) Pitch
17. In this figure which machine part is a permanent fastener. 1
- a) Screw.
 - b) Rivets.
 - c) Washer.
 - d) Nut.
18. If John went wrong in joining the cooker parts he can separate all the parts at any time and reconnect it, and this type of process is called 1
- a) Permanent fastening
 - b) Temporary fastening
 - c) Welding.
 - d) Riveting.
19. For providing a smooth bearing surface what is provided with the nut in this figure? 1
- a) Screw
 - b) Washer
 - c) Rivet
 - d) Lid

20. Nuts will be having which type of threads? 1
- Internal threads
 - External threads
 - Taper threads
 - Parallel thread
21. Construct an isometric scale. 5
22. Draw the isometric projection of an inverted triangular pyramid of base side 50 mm and axis of 80 mm keeping one of its base sides parallel to V.P. and nearer the observer. 10
23. Draw to scale 1:1, the Front View, Top View and side view of a hexagonal headed bolt of diameter 25mm with hexagonal nut and washer, keeping the axis parallel to V.P and H.P 8
- (or)**
- Draw to scale 1:1, the standard profile of metric screw thread (internal) taking enlarged pitch as 50mm. Give standard dimensions.
24. The given figure shows the details of the parts of an OPEN BEARING. Assemble these parts correctly, and then draw the following views to scale 1:1 (a) Front view, left half in section (b) Left Side view Print the titles and scale used. Draw the symbol of projection. Give six important dimensions. 27



****END OF THE QUESTION PAPER****



ROLL NUMBER				
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SET	B
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**INDIAN SCHOOL MUSCAT
HALF YEARLY EXAMINATION 2023
ENGINEERING GRAPHICS (046)**



CLASS : XII
DATE: 12-09-2023

TIME ALLOTTED : 3 HRS.
MAXIMUM MARKS: 70

GENERAL INSTRUCTIONS:

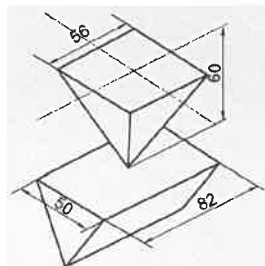
- (i) Attempt all the questions.
- (ii) Use both sides of the drawing sheet, if necessary.
- (iii) All dimensions are in millimeters.
- (iv) Follow the SP: 46 2003 revised codes. (With first angle method of projection)
- (v) Missing and mismatching dimensions, if any, may be suitably assumed.
- (vi) In no view of Question 22, are hidden edges or lines required.
- (vii) In Question 24, hidden edges or lines are to be shown in view without section.

1. Mechanisms of machine tools, valves, spindles, vice screws etc., are generally provided with _____ threads? 1
 - a) Square thread.
 - b) Knuckle thread.
 - c) BSW thread.
 - d) Metric thread.
2. The nomenclature SQ 40*4 stands for _____. 1
 - a) Square thread; Nominal diameter = 40 mm; Pitch = 4 mm.
 - b) Square thread; Pitch = 40 mm; Nominal diameter = 4mm.
 - c) Metric thread; Nominal diameter = 40 mm; Pitch = 4mm.
 - d) B.S.W thread; Nominal diameter = 40 mm; Pitch = 4mm.
3. Which of the following is not a use of knuckle thread? 1
 - a) It is used in railway carriage coupling screws.
 - b) It is used on the neck of glass bottles.
 - c) It is used on the old electric bulbs.

- d) It is the best choice for mechanical power transmission.
4. Which one of the following is a permanent fastener? 1
- Rivet.
 - Nut-Bolt.
 - Screw.
 - Stud.
5. The Isometric view of a vertical line is represented at an angle of _____ in front view and having a length _____ the original length of the line. 1
- 30° , same as.
 - 30° , less than
 - 90° , same as
 - 90° , less than
6. What do hidden lines in orthographic projections denote? 1
- Holes or slots.
 - Change of planes.
 - Position of cut.
 - Centre of a circle or cylinder
7. The isometric projection of 90 mm line is _____ mm. 1
- $30 \times \frac{1}{2}$
 - $30 \times \frac{3}{4}$
 - $30 \times \frac{2}{3}$
 - None of the above.
8. The Isometric projection of a horizontal line is represented at an angle of _____ in front view and having a length _____ the original length of the line. 1
- 30° , same as.
 - 30° , less than
 - 90° , same as
 - 90° , less than

Q. 9 to Q. 14 select the correct option corresponding to the orientations of the given Isometric projection :

9.

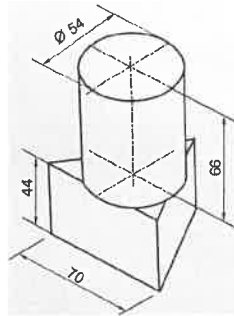


1

- a). An inverted square pyramid is kept on a horizontal triangular prism
- b) A vertical triangular pyramid is kept on a vertical square slab.
- c) A vertical square pyramid is kept on a vertical square slab.
- d) A vertical triangular pyramid is kept on a vertical circular disc.

10.

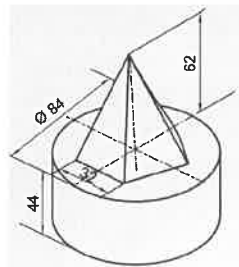
1



- a) A vertical cylinder of base diameter 54 mm is placed centrally on a hexagonal prism which is resting on HP with one of its long edges.
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- c) A vertical cylinder of base diameter 54 mm is placed centrally on a pentagonal prism which is resting on HP with one of its rectangular faces.
- d) A vertical cylinder of base diameter 54 mm is placed centrally on a hexagonal prism which is resting on HP with one of its rectangular faces.

11.

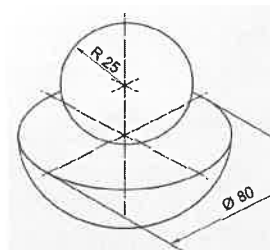
1



- a) A vertical square pyramid is kept on a vertical circular disc.
- b) A vertical triangular pyramid is kept on a vertical square slab.
- c) A vertical square pyramid is kept on a vertical square slab.
- d) A vertical pentagonal pyramid is kept on a vertical circular disc.

12.

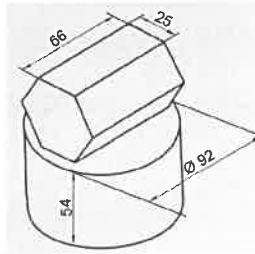
1



- a) The isometric projection of a sphere is a circle whose diameter is equal to the isometric diameter of the sphere.

- b) The isometric projection of a sphere is a circle whose diameter is equal to the true diameter of the sphere.
- c) The isometric projection of a sphere is a circle whose diameter is equal to half of the true diameter of the sphere.
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13.

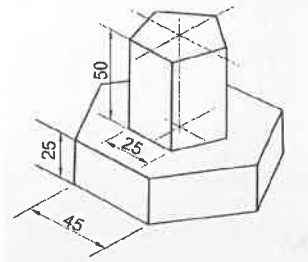


1

- a) A pentagonal prism is kept centrally on the top surface of a cylinder with rectangular faces on it.
- b) A hexagonal prism is kept centrally on the top circular surface of a cylinder with its rectangular faces on it.
- c) A hexagonal pyramid is kept centrally on the top rectangular face of a hexagonal prism with its triangular faces on it.
- d) A hexagonal prism is kept centrally on the top of a cylinder with its hexagonal face on it.

14.

1



- a) The top solid is square prism and the bottom solid is triangular prism.
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- d) Both the solids are pentagonal prisms.

TWO STATEMENTS ARE GIVEN – ONE LABELLED ASSERTION (A) AND THE OTHER LABELLED REASON (R). SELECT THE CORRECT ANSWER TO THE FOLLOWING QUESTIONS FROM THE CODES (a), (b), (c) AND (d) AS GIVEN BELOW:

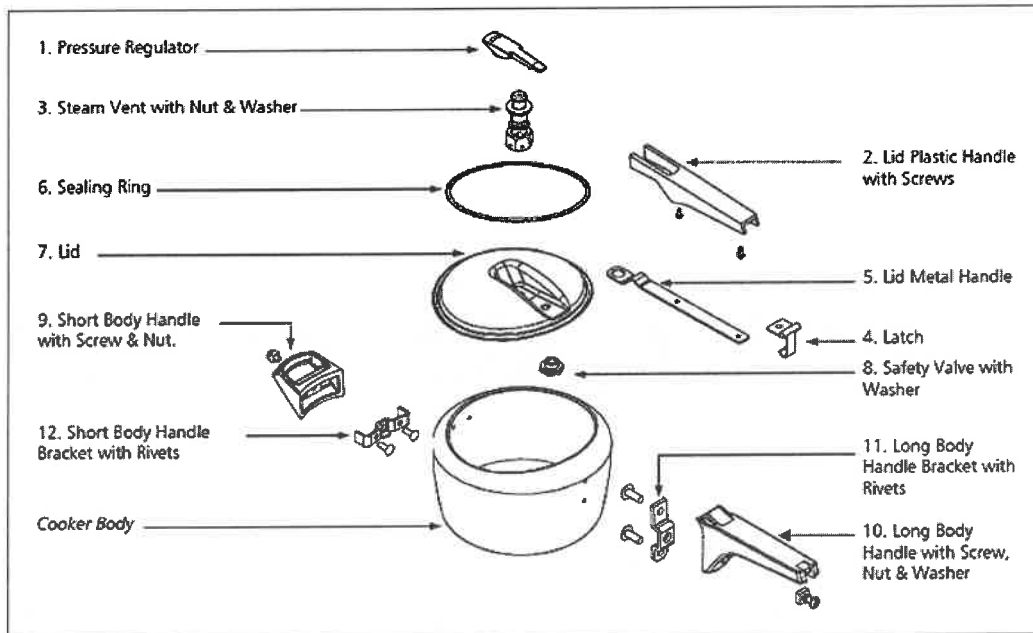
- a) Both A and R is true and R is the correct explanation of A.
- b) Both A and R is true and R is not the correct explanation of A.
- c) A is true but R is false.

d) A is false and R is also false.

15. A: Mechanisms of machine tools, valves, spindles, vice screws etc. are generally provided with square threads. 1

R: Square threads are used in the neck of glass bottles.

Q. 16 to Q. 20 Read the paragraph given below and answer the following questions.



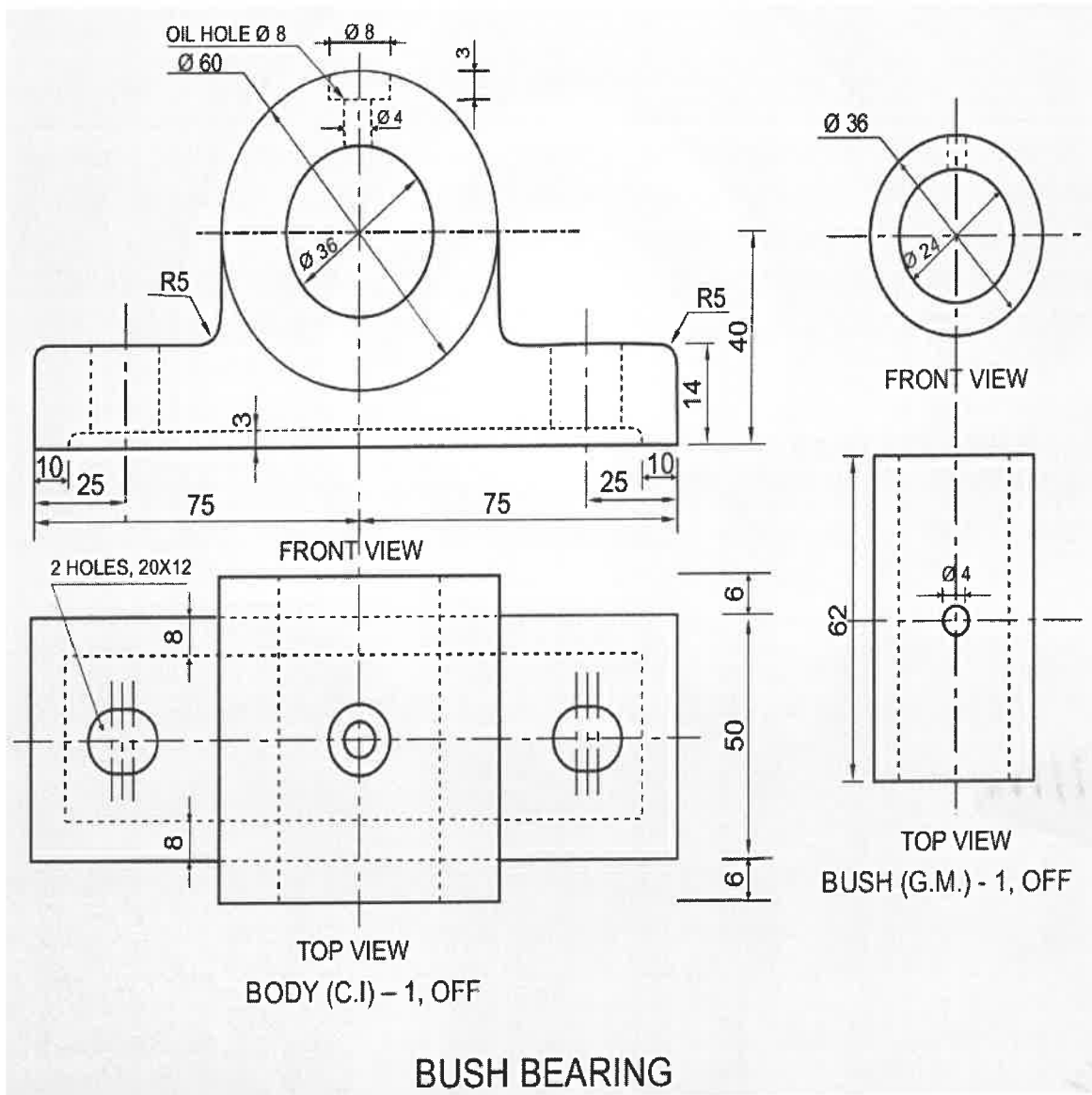
16. The process of joining different machine parts is called as 1
- Fastening.
 - Screw threads.
 - Crest
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17. In this figure which machine part is a permanent fastener. 1
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18. If John went wrong in joining the cooker parts he can separate all the parts at any time and reconnect it, and this type of process is called 1
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20. Nuts will be having which type of threads? 1
- a) Internal threads
 - b) External threads
 - c) Taper threads
 - d) Parallel thread
21. Construct an isometric scale. 5
22. Draw the isometric projection of a frustum of a cone of diameter 30 mm at smaller end, diameter 50 mm at bigger end and the axial height is 80 mm. It is resting on its bigger end on H.P. keeping its axis vertical. 10
23. Draw to scale 1:1, the Front View and Side View of an assembly of a square bolt of diameter 25 mm and a square nut, keeping the axis parallel to V.P and H.P. Take length of the bolt as 100 mm. 8

(or)

Draw to scale 1:1, standard profile of B.S.W. thread, taking pitch = 40 mm. Give standard dimensions.

24. The given figure shows the details of the parts of a BUSH BEARING. Assemble these parts correctly, and then draw to scale 1:1, the following views. (a) Front view, left half in section (b) Right side view Print titles and the scale used. Draw the projection symbol. Give six important dimensions. 27



END OF THE QUESTION PAPER

Shani Singh