

CBSE Class 12 Engineering Graphics Question Paper 2026 with Solutions(Memory Based)

General Instructions

1. The question paper consists of six sections — Section A to Section F.
2. Time allowed is **3 hours 15 minutes** and the maximum marks are **90**.
3. All questions are compulsory unless otherwise stated.
4. Section A contains Multiple Choice Questions (MCQs). Choose the correct answer from the given options.
5. Section B includes:
 - True/False questions
 - Fill in the blanks
 - Very short answer questions (one or two words)
6. Section C contains short answer type questions.
7. Section D contains long descriptive questions with internal choices.
8. Section E contains long answer questions. Attempt the required number as instructed.
9. Section F consists of Map Work. Mark and label the places correctly on the outline map of India.
10. Figures to the right indicate full marks for each question.
11. Write neatly and draw diagrams wherever necessary.
12. Write answers only in the space provided or as instructed.

1. A thread with vertical and parallel flanks is called

- (A) Square thread
- (B) Triangular thread
- (C) Knuckle thread
- (D) V-thread

Correct Answer: (A) Square thread

Solution:

A square thread is a type of thread with vertical and parallel flanks, which is typically used for applications requiring high efficiency in power transmission, such as in lead screws and clamps.

Step 1: Analyze the options.

- (A) Square thread: Correct — has vertical and parallel flanks.
- (B) Triangular thread: Incorrect — has inclined flanks, not vertical.
- (C) Knuckle thread: Incorrect — designed for durability but does not have vertical flanks.
- (D) V-thread: Incorrect — flanks are at an angle to the axis, not vertical.

Step 2: Conclusion.

Hence, the correct answer is (A).

Final Answer:

(A) Square thread

Quick Tip

Square threads provide high efficiency in power transmission due to their vertical flanks.

2. The length of the metal end of a plain stud of diameter 30 mm is

- (A) 10 mm
- (B) 24 mm
- (C) 30 mm
- (D) 66 mm

Correct Answer: (B) 24 mm

Solution:

The length of the metal end of a plain stud is typically measured as a standard proportion of the stud diameter. For a 30 mm diameter stud, the metal end length is generally considered to be 24 mm.

Step 1: Analyze the options.

- (A) 10 mm: Incorrect — too short for the given stud diameter.
- (B) 24 mm: Correct — standard measurement for the metal end length.
- (C) 30 mm: Incorrect — too long for the metal end length.
- (D) 66 mm: Incorrect — this measurement is too large for a 30 mm diameter stud.

Step 2: Conclusion.

Hence, the correct answer is (B).

Final Answer:

(B) 24 mm

Quick Tip

The length of the metal end for a plain stud is typically around 80

3. The projections which are mostly used in the design process of this product is

- (A) Perspective projection and oblique projection
- (B) Isometric projection and orthographic projection
- (C) Perspective projection and axonometric projection
- (D) Oblique projection and multi-view projection

Correct Answer: (B) Isometric projection and orthographic projection

Solution:

In the design process, especially for technical drawings, isometric and orthographic projections are most commonly used. These projections help represent the object in 3D while preserving angles and proportions.

Step 1: Analyze the options.

- (A) Perspective projection and oblique projection: Incorrect — not typically used together for design purposes.
- (B) Isometric projection and orthographic projection: Correct — widely used for representing objects clearly in engineering drawings.
- (C) Perspective projection and axonometric projection: Incorrect — axonometric projections are often preferred for technical drawings over perspective projections.
- (D) Oblique projection and multi-view projection: Incorrect — multi-view projection is a form of orthographic projection, but oblique is not commonly paired with it.

Step 2: Conclusion.

Hence, the correct answer is (B).

Final Answer:

(B) Isometric projection and orthographic projection

Quick Tip

Isometric projections represent three-dimensional objects on two-dimensional planes without distortion of angles or proportions.

4. Cylinder and hemisphere are examples of

- (A) Solids of revolution
- (B) Tetrahedron
- (C) Solids of sectioning
- (D) Polyhedron

Correct Answer: (A) Solids of revolution

Solution:

A cylinder and a hemisphere are both formed by revolving a 2D shape around an axis, making them examples of solids of revolution.

Step 1: Analyze the options.

- (A) Solids of revolution: Correct — formed by revolving a 2D shape around an axis.
- (B) Tetrahedron: Incorrect — a polyhedron with four faces, not formed by revolution.
- (C) Solids of sectioning: Incorrect — refers to solids obtained by sectioning objects, not by revolving them.
- (D) Polyhedron: Incorrect — solids with flat faces, not generated by revolution.

Step 2: Conclusion.

Hence, the correct answer is (A).

Final Answer:

(A) Solids of revolution

Quick Tip

Solids of revolution are formed by rotating a 2D shape around an axis, such as cylinders and spheres.

5. Grub screws are also known as

- (A) Counter sunk head screw
- (B) Pan head screw
- (C) Headless screw
- (D) Threadless screw

Correct Answer: (C) Headless screw

Solution:

Grub screws are also known as headless screws. They are typically used to secure an object within or against another object, particularly in situations where there is no space for a screw head. These screws do not have a head and are designed to be fully inserted into the part they secure.

Step 1: Analyze the options.

- (A) Counter sunk head screw: Incorrect — has a counter sunk head for a flush fit.
- (B) Pan head screw: Incorrect — has a rounded, flat head.
- (C) Headless screw: Correct — grub screws are headless screws.
- (D) Threadless screw: Incorrect — this is not a common screw type.

Step 2: Conclusion.

Hence, the correct answer is (C).

Final Answer:

(C) Headless screw

Quick Tip

Grub screws, also called headless screws, are used when there's no room for a head to protrude.

6. Why grub screws are used to hold sleeve on a shaft?

- (A) To reduce the misalignment of shaft.
- (B) To prevent the relative motion.
- (C) To reduce the production cost.
- (D) To prevent the leakage of joint.

Correct Answer: (B) To prevent the relative motion.

Solution:

Grub screws are used to secure a sleeve onto a shaft by preventing the relative motion between the shaft and the sleeve. This ensures the components do not slip or rotate relative to each other.

Step 1: Analyze the options.

- (A) To reduce the misalignment of shaft: Incorrect — grub screws are not primarily used for alignment.
- (B) To prevent the relative motion: Correct — grub screws hold the sleeve securely to the shaft, preventing relative motion.
- (C) To reduce the production cost: Incorrect — this is not the main function of grub screws.
- (D) To prevent the leakage of joint: Incorrect — grub screws do not serve this purpose.

Step 2: Conclusion.

Hence, the correct answer is (B).

Final Answer:

(B) To prevent the relative motion.

Quick Tip

Grub screws are used for preventing relative motion between components, especially when there's no space for a head.