Indian School Al Wadi Al Kabir

Unit Test (2026-2027)

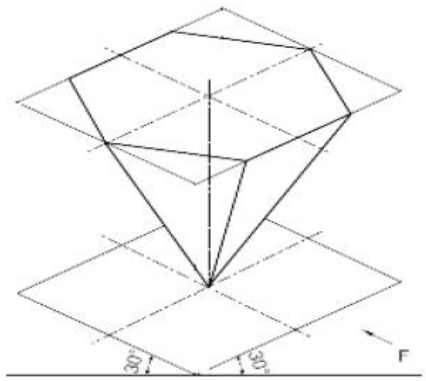
Sub: ENGINEERING GRAPHICS (046)

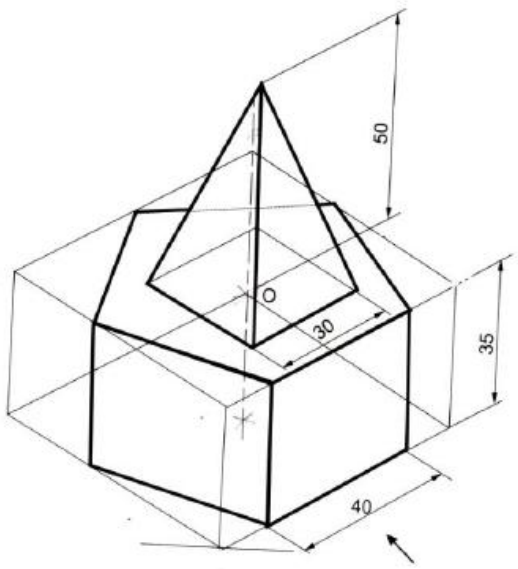
Class: XII Set - 1 Max. Marks: 30

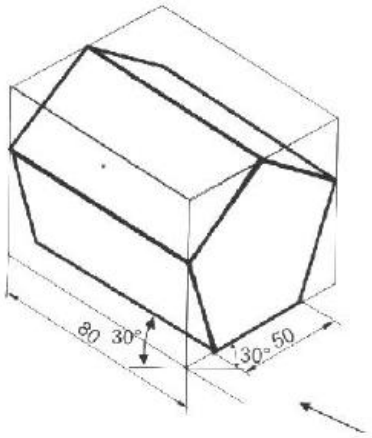
Date: 19/05/2026 Time: 1 Hour

General Instructions:

(i) Attempt all the questions.
(ii) Use both sides of the drawing sheet, if necessary.
(iii) All dimensions are in millimetres.
(iv) Missing and mismatching dimensions, if any, may be suitably assumed.
(v) Follow the SP: 46 – 2003 revised codes. (with the first angle method of projection)

Q. No.	Questions	Marks
	SECTION - A	
1.	Pictorial drawings used to communicate the structure of objects to others are called --------. (a) Multiple plane drawings (b) Three plane drawings (c) Two plane drawings (d) One plane drawings	**1**
2.	Which one is not a temporary fastener? (a) Bolt (b) Screw (c) Rivet (d) Stud	**1**
3.	A thread formed on the surface of a cone is called a ----------. (a) straight thread (b) slant thread (c) parallel thread (d) taper thread	**1**
4.	Choose the correct statements for the given hexagonal pyramid as seen from F:  	**1**

	(i) Two base sides are perpendicular to VP (ii) Two base sides are parallel to VP (iii) The axis is parallel to VP (iv) The axis is perpendicular to VP (a) (i) & (ii) (b) (ii) & (iii) (c) (i) & (iii) (d) (ii) & (iv)	
5.	Which statements are correct for the given figure on the isometric projection of a combination of solids?  (i) Four base sides are parallel to VP. (ii) There are two triangular faces. (iii) One rectangular face is perpendicular to HP and VP. (iv) There are fifteen vertices, including the apex. (a) (i) & (iii) (b) (iii) & (iv) (c) (i) & (iv) (d) (ii) & (iii)	**1**
6.	Select the correct option corresponding to the orientation of the given isometric projection.	**1**



(a) The hexagonal ends are parallel to VP.
(b) The pentagonal ends are parallel to VP.
(c) The hexagonal ends are perpendicular to VP.
(d) The pentagonal ends are perpendicular to VP.

7. Match the LIST I with LIST II **1**

LIST 1	**LIST II**
1. The surface connecting crest and root is:	i. Lead
2. The angle between the flanks measured in an axial plane:	ii. Flank
3. It is the distance between the corresponding points on the adjacent threads, measured parallel to the axis:	iii. Thread angle
4. It is the distance moved by a nut or bolt in the axial direction in one complete rotation:	iv. Pitch

(a) 1-iii, 2-iv, 3-i, 4-ii

(b) 1-i, 2-iii, 3-ii, 4-iv

(c) 1-iv, 2-iii, 3-ii, 4-i

(d) 1-ii, 2-iii, 3-iv, 4-i

Q 8 to 10: Read the following paragraph and answer the questions given below.

At a mechanical engineering exhibition held at a local technical institute, a Class 12 Engineering graphics student visited the machine drawing section along with her teacher. She observed various models of nuts, bolts, and screw threads displayed in different forms. Some bolts had hexagonal heads, while others had square heads.

A demonstration stall showed how temporary fasteners like nuts and bolts are used to join machine parts, while permanent fasteners like rivets are used where dismantling is not required. She also saw sectional views of threaded assemblies,

	where the internal and external threads were represented using standard conventions. She recalled learning about terms like pitch, crest, root, and major diameter in her engineering graphics class. Intrigued, she began comparing the models with the drawings she had practised in her notebook. 	
8.	Which of the following fasteners cannot be removed without damaging the joint? (a) Bolt (b) Nut (c) Rivet (d) Screw	**1**
9.	Which thread is generally used in the neck of glass bottles? (a) BSW thread (b) Metric thread (c) Square thread (d) Knuckle thread	**1**
10.	The top surface of a screw thread is called: (a) Root (b) Pitch (c) Crest (d) Flank	**1**
	SECTION - B	
11.	Construct an isometric scale.	**4**
12.	Draw the isometric projection of a pentagonal prism (base edge 30 mm, axial length 60 mm) resting on its face, with its axis parallel to both H.P. and V.P. Indicate the direction of viewing. Give all the dimensions.	**10**
13.	Draw to scale 1:1 the standard profile of the Metric thread (External) with pitch = 50mm. Give standard dimensions.	**6**

All the Best