	INDIAN SCHOOL AL WADI AL KABIR

UNIT TEST (2023 - 24)

Class: XII   Sub: ENGINEERING GRAPHICS (046)   Max Marks: 30

Date:25.05.2023   Set - 1   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 millimeters.
(iv) Missing and mismatching dimensions, if any, may be suitably assumed.
(v) Follow the SP: 46 – 2003 revised codes. (with first angle method of projection)
(vi) In no view of question 12, are hidden edges or lines required.

<u>SECTION – A (10 x 1 = 10)</u>

1. In Isometric projection the ratio of isometric length to true length is

     a) 1:2

     b) 0.816:1

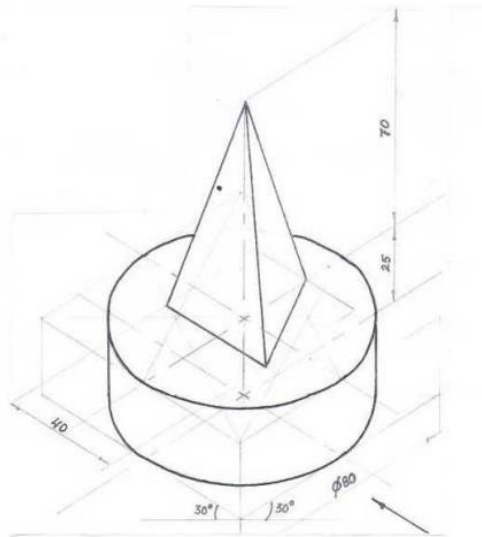   c) 1:1

     d) 0.826:1

  2. The machine parts used to connect two pieces together is called as -----------

     a) Screw Thread

     b) Fasteners

     c) Bearings

     d) Keys

3. The surface connecting crest and root is called -----------

   a) Pitch

   b) Lead

   c) Flank

   d) Screw Pair

4.

a) vertical square pyramid is kept on a vertical circular disc.

b) vertical triangular pyramid is kept on a vertical square slab.

c) vertical square pyramid is kept on a vertical square slab.

d) vertical triangular pyramid is kept on a vertical circular disc

5. Select the correct statement/s for the given figure
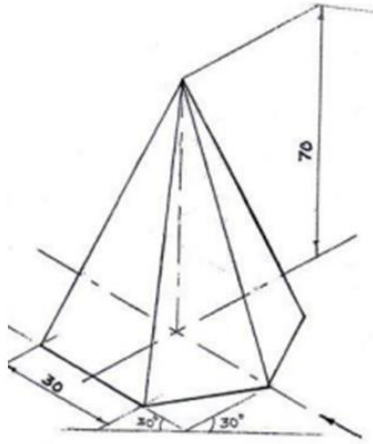
A. Two of the base edges which are parallel to each other are parallel to VP.
B. The solid is resting on HP with its axis parallel to VP
C. Two of the base edges which are parallel to each other are perpendicular to VP
D. The solid is resting on HP with its axis perpendicular to VP

 a) A and B only.
 b) B and C only
 c) C and D only
 d) D and A only

6. Select the correct sequence of drawing the isometric projection of a vertical straight cone placed centrally on top of a vertical triangular prism

A. Draw three principal axes at 30°, 90° and 30° to the horizontal base line and copy the length of sides of helping figure's enclosing box on the respective principal axis and height of the prism on the third principal axis to form an enclosing box (cuboid) for triangular prism.

B. Draw the direction of viewing and do the dimensioning.

C. Draw the helping figure which is the base of vertical triangular prism (using isometric scale) and enclose it in a box, which is a rectangle.

D. Copy the coordinates of the centre and vertices of triangle from the helping figure to enclosing box of triangular prism. Visible edges of triangular prism are joined by thick lines and axis of prism is drawn with chain line.

E. Draw the enclosing box for the base of cone on the top surface of the prism and construct an ellipse (by four centre method). Mark the height of the cone (apex) from the centre of top surface of prism at 90°. Join the generators of the cone

a) B, D, A, C, E

b) C, A, D, E, B

c) A, B, C, D, E

d) D, E, B, A, C

7. Match the LIST I with LIST II

LIST I – TYPES OF THREADS	LIST II – THREAD SPECIFICATIONS
1.BSW thread	i) R = 0.25P
2. Metric thread	ii) 90 degree
3.Square thread	iii) 60 degree
4.Knuckle thread	iv) 55 degree

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-i, 3-iv, 4-iii

Q8. to 10: Read the following paragraph and answer the questions given below

Varun is an Engineering graphics student of grade XII, he is very passionate with the subject EG. He is studying Machine drawing in his EG class now, one day he noticed the helical grove in the neck of his water bottle. He was very curious to know about it and the next day he asked about the same to his EG teacher. She has explained everything about it.

8. A continuous helical groove cut along the outer circumference of a cylindrical surface is called a -----------------

a) Pitch

b) Lead

c) Screw thread

d) Screw pair

9. Which thread is formed on the neck of water bottles?

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

10. Which thread is called the modified form of square thread and what is the radius of tangential semicircles of that particular thread?

 a) Knuckle thread & R = 0.25P
b) Metric thread & R = 0.25P
c) Knuckle thread & R = 0.5P
d) Metric thread & R = 0.5P

SECTION B

1 x 4 = 4

11. Construct an isometric scale of 80 mm.

1x10 =10

12. Draw the isometric projection of a cylinder of height of 75 mm and diameter of 50 mm resting on its base keeping the axis perpendicular to H.P. Indicate the direction of viewing. Give all the dimensions.
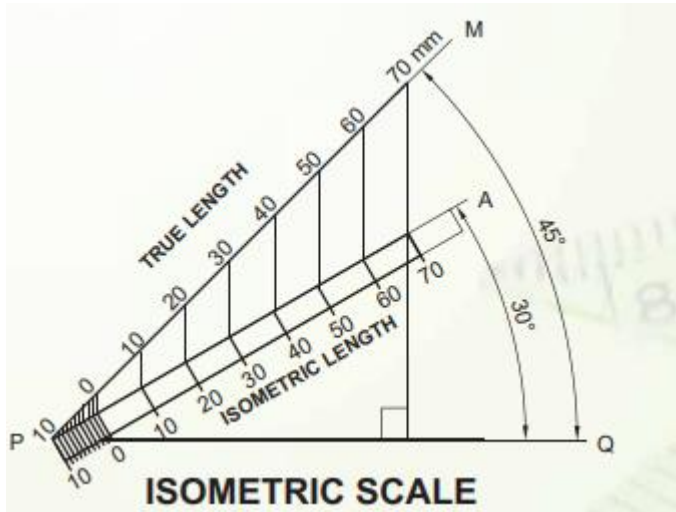
1 x 6 = 6

13. Draw to scale 1:1, the standard profile of B.S.W thread, taking pitch = 50 mm. Give standard dimensions.

10 x 1 = 10

SECTION – A

| Q.NO	ANSWERS
1	b) 0.816:1
2	b) Fasteners
3	c) Flank
4	d) vertical triangular pyramid is kept on a vertical circular disc
5	b) B and C only
6	b) C, A, D, E, B
7	c) 1-iv, 2-iii, 3-ii, 4-i
8	c) Screw thread
9	c) Knuckle thread
10	a) Knuckle thread & R = 0.25P

SECTION B

1 x 4 = 4

11. Construct an isometric scale of 80 mm.
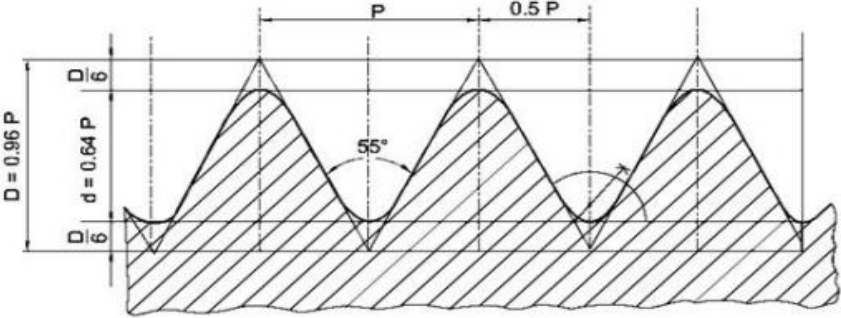
ISOMETRIC SCALE

1x10 =10

12. Draw the isometric projection of a cylinder of height of 75 mm and diameter of 50 mm resting on its base keeping the axis perpendicular to H.P. Indicate the direction of viewing. Give all the dimensions.

ISOMETRIC PROJECTION
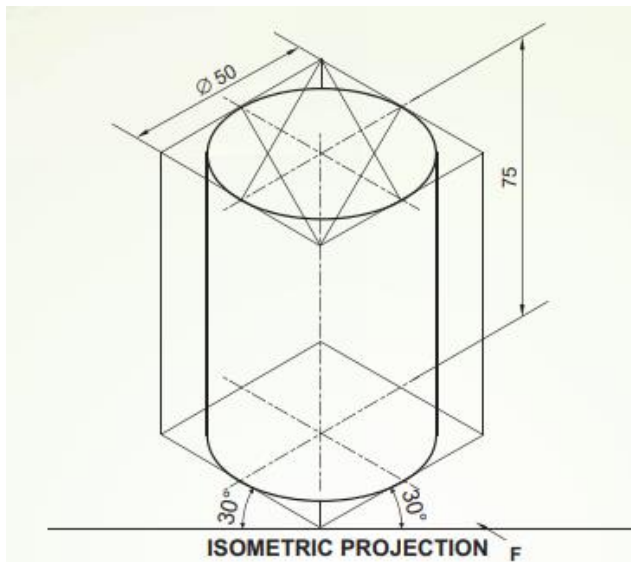
1 x 6 = 6

13. Draw to scale 1:1, the standard profile of B.S. W thread, taking pitch = 50 mm. Give standard dimensions.

P	D	d	D/6
50	48	32	8

STANDARD PROFILE OF B.S.W. SCREW THREAD