Indian School Al Wadi Al Kabir

Unit Test (2026-2027)

Sub: ENGINEERING GRAPHICS (046)

Class: XI Set - 1 Max. Marks: 30

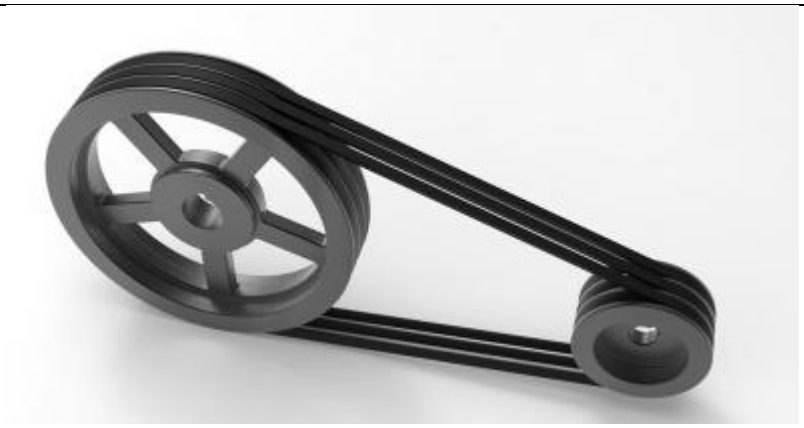
Date: 24/05/2026 Time: 1 Hour

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)

	SECTION - A	
Q. No.	**Questions**	**Marks**
1.	Which type of line is used to show projection lines and dimension lines? (a) Continuous thick lines (b) Hatching lines (c) Continuous thin lines (d) Section lines	**1**
2.	A/An ---------- figure is a shape drawn outside another shape. (a) inscribed (b) triangular (c) sectional (d) circumscribed	**1**
3.	The angle between 90° and 180° is called ----------. (a) Obtuse angle (b) Right angle (c) Acute angle (d) Straight angle	**1**
4.	– – – – – – – – – Identify the type of line shown in the above figure. (a) Hidden line (b) Axis line (c) Hatching line (d) Dimension line	**1**

5.	Which system of placing dimensions is used for large drawings? (a) Unidirectional system (b) Aligned system (c) Non-aligned system (d) Multidirectional system	**1**
6.	Pick the odd one out from the following. (a) Pentagon (b) Square (c) Rectangle (d) Trapezium	**1**
7.	Match the LIST I with LIST II **LIST I** / **LIST II** 1. Straight lines can be drawn with its help — i) Pencils 2. Lines of different thickness are drawn by using — ii) Mini drafter 3. For measuring any angle, we use — iii) T- scale 4. Combination of scale & protractor — iv) Protractor (a) 1-iii, 2-iv, 3-i, 4-ii (b) 1-i, 2-ii, 3-iii, 4-iv (c) 1-iii, 2-i, 3-iv, 4-ii (d) 1-iv, 2-i, 3-ii, 4-iii	**1**
	Q 8 to 10: Read the following paragraph and answer the questions given below. You are a part of the design team in a mechanical company working on a **belt-driven pulley system**. The pulley is circular, and a belt runs along its outer edge to transfer motion. The **diameter of the pulley is 280 mm**. To ensure proper functioning, you must calculate: • The **circumference** (length of the belt in contact) • The **arc length** covered when the pulley rotates partially • The **angle subtended** for specific motion transfer	

		
8.	What is the radius of the pulley? (a) 280 mm (b) 140 mm (c) 70 mm (d) 560 mm	**1**
9.	What is the circumference of the pulley? (approx., taking $\pi \approx 3.1416$) (a) 879 mm (b) 439 mm (c) 219 mm (d) 176 mm	**1**
10.	If the pulley rotates through 90°, what fraction of the circumference is covered? (a) 1/2 (b) 1/3 (c) 1/4 (d) 3/4	**1**
	SECTION - B	
11.	Construct a right-angled triangle ABC, having its altitude BA equal to 35 mm and its hypotenuse AC equal to 50 mm.	**2**
12.	Given the arc PQ, complete the circle.	**2**
13.	Construct a triangle FDE having its perimeter AB equal to 95 mm and its sides in the ratio 2:3:4.	**3**
14.	Construct a trapezium ABCD, having its sides AD = 30 mm, DC = 25 mm, CB = 35 mm, and the difference of parallel sides is 20 mm.	**3**
15.	Construct a regular pentagon with base AB = 30 mm using a protractor, and now inscribe a circle in it.	**5**
16.	Construct a regular hexagon of 30 mm sides using a compass.	**5**

All the Best