Roll No. | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Agriculture Engineering/Artificial Intelligence & Machine Learning/Artificial Intelligence (AI) and Data Science/Artificial Intelligence/Automation & Robotics/Automobile Engineering/Civil Engineering/Computer Science Engg./Data Science/ Electrical & Electronics Engineering/ Electrical Engineering/ Electronics & Communication Engineering/ Electronics & Electrical Engineering/ Food Technology/ Information Technology/ Mechanical Engineering/ CSE (Internet of Things and Cyber Security including Block Chain Technology)/B.Tech. (Computer Science & Engineering/Artificial Intelligence & Machine Learning/Cyber Security Data Science/IOT) (Sem.–1,2)

ENGINEERING GRAPHICS & DESIGN

Subject Code : BTME-101-21

M.Code : 91335

Date of Examination : 19-07-22

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION - B & C have FOUR questions each.**
3. **Attempt any FIVE questions from SECTION B & C carrying EIGHT marks each.**
4. **Select atleast TWO questions from SECTION - B & C.**

SECTION-A

1) **Write short notes on :**

a) Explain the following terms with a suitable drawing: Apex, Slant Height, Base Rim and Generator.

b) Draw a regular Pentagonal Lamina of side 55mm.

c) Explain with the help of an example the Aligned system of placement of dimensions.

d) What do you mean by Representative Fraction (RF)?

e) Explain any Two Lines used in Engineering Drawing.

f) How will you represent Metals and Liquid on a drawing sheet?

g) What are right solids and oblique solids? Explain with a suitable freehand drawing.

h) Show by means of traces, a plane perpendicular to both HP and VP.

i) Write the following statement using single stroke capital vertical letters of 12 mm size : "IKGPTU KAPURTHALA".

j) Differentiate Isometric Projections and Isometric Drawing.

SECTION-B

2) Construct a Diagonal Scale of R.F = 1:50 to read meters, decimeters and centimeters and long enough to measure up to 6m. Indicate 3.46m on the scale.

3) A point "G" is 22mm in front of VP and 42mm above HP. Draw its projections and find out its shortest distance from the reference line.

4) A line AB has its end "A" 15 mm above HP and 20 mm in front of VP. End "B" 40 mm above HP and 50 mm in front of VP. The distance between the end projectors is 45 mm. Draw the projections of the line and find out its true length, true inclinations with principal planes, HT and VT.

5) Line "AB" 65mm long; has its end "A" both in HP and VP. It is inclined at 45° to the "HP" and 30° to the "VP". Draw its projections when the line is lying in third quadrant.

SECTION-C

6) A right regular triangular prism of base edge 40 mm, axis 65 mm long is resting on its rectangular face on HP, with axis parallel to both HP and VP. Draw its projections.

7) A regular hexagonal thin plate of 45 mm side is resting on one of its corners in HP. Draw its projections when the plate surface is vertical and inclined to VP at 30°.

8) Draw the projections of a cone of base diameter 42 mm and axis 62 mm; lying on HP on its generator such that the axis is parallel to VP. Assume the cone lying in first quadrant.

9) A right regular hexagonal prism, edge of base 20 mm, and height 50 mm has a central circular hole of diameter 20 mm drilled centrally through it along its axis. Draw its isometric view.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

Roll No. | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Aerospace Engineering/Bio Technology/ Civil Engineering/Computer Science & Engineering/Electrical & Electronics Engineering/Electrical Engineering/Electronics & Communication Engineering/Electronics & Electrical Engineering/Information Technology/Mechanical Engineering) (Sem.–1,2)

ENGINEERING DRAWING

Subject Code : BTME-102

M.Code. : 54102

Date of Examination : 19-07-22

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION - B & C have FOUR questions each.**
3. **Attempt any FIVE questions from SECTION B & C carrying EIGHT marks each.**
4. **Select atleast TWO questions EACH from SECTION - B & C.**

SECTION–A

1) Answer briefly :

a) What is a sectional view? Why they are important in engineering drawing?

b) Draw a regular Pentagonal Lamina of side 55mm.

c) What is the purpose of the development of surfaces? Explain.

d) What do you mean by Representative Fraction (RF)?

e) Draw symbols used to represent first angle and third angle orthographic projections.

f) Explain with the help of a suitable drawing, the Aligned and Unidirectional system of placement of dimensions.

g) What are right solids and oblique solids? Explain with a suitable freehand drawing.

h) Show by means of traces, a plane perpendicular to both HP and VP.

i) Write the following statement using single stroke capital vertical letters of 12 mm size : "IKGPTU KAPURTHALA".

j) Differentiate Isometric Projection and Isometric Drawing.

SECTION-B

2) The distance between Delhi and Agra is 200 km. In a railway map, it is represented by a line 5 cm long. Find its R.F. Draw a diagonal scale to show single km and long enough to measure up to 600km.

3) Plan and elevation of a line "AB" 60 mm long, measures 54 mm and 45 mm respectively. End "A" is 15 mm from HP and 10 mm from VP. Draw the projections of the line and determines its inclination to the reference planes when line lies in first quadrant.

4) A regular pentagonal plate of side 40 mm is resting on HP on one of its sides such that its surface makes an angle of 40° with HP and is perpendicular to VP. Draw the orthographic projections.

5) A right regular hexagonal prism of base edge 38 mm, axis 62 mm long is resting on its rectangular face on HP, with axis parallel to both HP and VP. Draw its projections.

SECTION-C

6) A right regular hexagonal prism of base edge 20 mm and height 50 mm rests on HP on its base with one of its base edges perpendicular to VP. An Auxiliary Inclined Plane (AIP) inclined to HP at 30° cuts its axis at 30 mm from the base. Develop the lateral surface of the truncated prism.

7) A right circular cone, diameter of base rim 40 mm and height 70 mm rests on its base on HP. A section plane perpendicular to VP and inclined to HP at 45° cuts the cone meeting its axis at a distance of 40 mm from its apex. Draw its front view and sectional top view.

8) A cylinder 50 mm diameter and 70 mm long axis resting on HP on its base is completely penetrated by another cylinder of 40 mm diameter and 70 mm long axis horizontally. Both axes intersect & bisect each other. Draw projections showing curves of intersections.

9) A right regular pentagonal prism, edge of base 20 mm, and height 50 mm has a central circular hole of diameter 20 mm drilled centrally through it, along its axis. Draw its isometric view.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.