

Hall Ticket Number :

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R-15

Code: 5G121

I B.Tech. II Semester Supplementary Examinations August 2021

C Programming and Data Structures

(Common to All Branches)

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)

UNIT-I

1. a) What is the use of command line arguments
b) Write a program using pointers to compute the sum of all elements stored in an array.

OR

2. a) How pointers permit inter function communication.
b) How do you simulate arrays using pointers? Illustrate.

UNIT-II

3. a) How to copy and compare structure variables? Illustrate with example.
b) Write and Explain syntax of the following functions: (i) fopen() (ii) fclose() (iii) fread() (iv) fwrite() (v) rewind() (vi) fprintf() (vii) fscanf() (viii) feof().

OR

4. a) Explain the following:
i. Nested structures ii. Array of structures
b) Define union. List out the differences between unions and structures

UNIT-III

5. a) What is Data Structure? Explain in detail about different type of data structures.
b) Write the steps for evaluating postfix expression

OR

6. Show the stack after each operation of the following sequence that starts with the empty stack: push(a), push(b), pop, push(c), push(d), pop.

UNIT-IV

7. What is a Singly Linked List.? Explain different operations of a singly linked list with suitable examples.

OR

8. Write a C function to insert and delete a node from the front end in case of doubly linked list.

UNIT-V

9. Define and describe the terms: Tree, Binary Tree, Complete Binary Tree and Degree of a tree.

OR

10. Define Graph and describe various representations of a graph with suitable examples.

Code: 5G523

I B.Tech. II Semester Supplementary Examinations August 2021

Engineering Drawing-II

(Common to EEE, ECE, CSE & IT)

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit (5x14 = 70 Marks)

UNIT-I

1. The top view of a plane object is a regular hexagon of side 40mm, with a central hole of 30mm diameter and with two sides of the hexagon is parallel to XY, when the surface of the object is inclined at 45° to H.P. Draw the true shape of the object. 14M

OR

2. A thin rectangular plate of sides of 60mm×30mm has its shortest side in the VP and inclined at 30° to the HP. Project its top view if its front view is a square of 30mm long sides. 14M

UNIT-II

3. Draw the projections of a hexagonal pyramid with side of base 30mm and axis 65mm long, which is resting with a slant face on H.P such that its axis is parallel to V.P. 14M

OR

4. Draw the projections of a cylinder of base 30mm diameter and axis 50mm long, when it is resting on HP on its base. 14M

UNIT-III

5. Draw an isometric projection of
i) a square plane of side 40mm
ii) a rectangular plane 60mm x 80mm
Both in the horizontal and the vertical plane 14M

OR

6. A cylinder of base 30mm diameter and axis 40mm long which lies on H.P on a point of its rim, with its axis inclined at 30° to H.P. Draw the projections of the cylinder when its top view of the axis is perpendicular to V.P. 14M

UNIT-IV

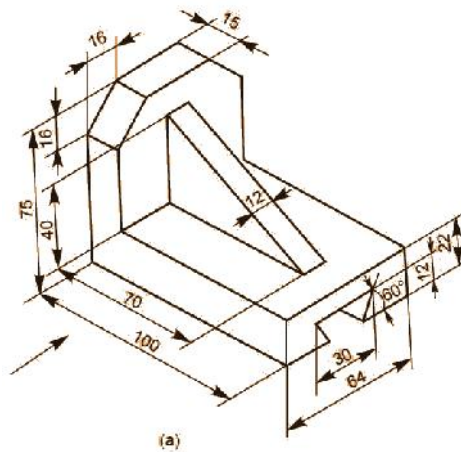
7. Draw the isometric view of a square prism with side of base 40mm and length of axis 70mm, when its axis is (i) vertical and (ii) horizontal. 14M

OR

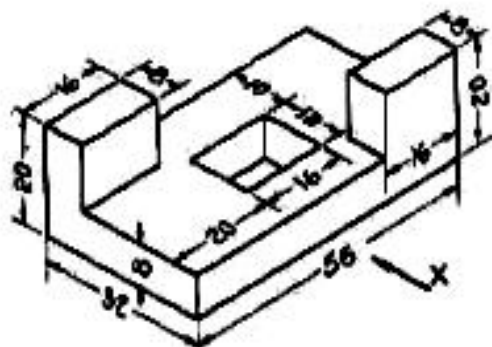
8. Draw the isometric view of a cone of base 40mm and length of axis 70mm, when its axis is (i) vertical and (ii) horizontal. 14M

UNIT-V

9. The Figure shows a machine block. Draw its (i) Front view (ii) Top view (iii) Side view. Assume all the dimensions are in 'mm'. 14M

**OR**

10. Draw the orthographic view of the following figure 14M



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R-15

Code: 5GC22

I B.Tech. II Semester Supplementary Examinations August 2021

Engineering Chemistry

(Common to EEE & ECE)

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)

UNIT-I

1. a) What is break point chlorination? State its significance. 7M
b) Write brief account on Priming and foaming. 7M

OR

2. a) What is hardness of water? How do you classify and express hardness? 7M
b) With the help of neat diagram, describe the reverse osmosis method for the desalination of brackish water. 7M

UNIT-II

3. Give reasons for the following
i) Pin holes on tin coated Iron are more prone to corrosion of Iron than those of Zinc coated Iron.
ii) Iron corrodes faster than Aluminium though Al is above Iron in EMF series.
iii) Corrosion of specimen can be controlled by using impressed current 14M

OR

4. Differentiate chemical and electrochemical corrosion 14M

UNIT-III

5. Write a note on processing of raw rubber? Explain the draw backs of raw rubbers. 14M

OR

6. Why silicones are called inorganic polymers? Discuss their synthesis. Write their applications 14M

UNIT-IV

7. a) Write a note on synthesis of petrol by Fischer Tropsch's method. 7M
b) What are the characteristics of a good fuel? 7M

OR

8. a) Write short note on octane number and cetane number. 7M
b) Compare the liquid fuels with gaseous fuels. 7M

UNIT-V

9. a) Describe the analysis of cement 7M
b) Write a note on the classification of refractories with examples. 7M

OR

10. a) Write a note on the composition of Portland cement 8M
b) Explain the importance of refractories and their applications. 6M

Code: 5GC24

I B.Tech. II Semester Supplementary Examinations August 2021

Engineering Mathematics-II

(Common to All Branches)

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit (5x14 = 70 Marks)

UNIT-I

1. Evaluate the integral by changing the order of integration $\int_0^a \int_{\frac{x^2}{a}}^{2a-x} x y^2 dy dx$

OR

2. Evaluate the double integral $\iint_R \sqrt{x^2 + y^2} dx dy$ by changing into polar coordinates, where 'R' is the region in the xy plane bounded by the circles $x^2 + y^2 = 4$

UNIT-II

3. Find the Laplace Transform of $\int_0^t \frac{e^{-t} \sin t}{t} dt$

OR

4. Find $L^{-1} \left\{ \frac{1}{(s-1)(s+3)} \right\}$

UNIT-III

5. Solve $y'' + 2y' - 3y = \sin t$, $y(0) = 0$, $y'(0) = 0$ Using Laplace Transform

OR

6. Solve the differential equation $\frac{d^2x}{dt^2} - 4\frac{dx}{dt} - 12x = e^{3t}$ given that $x(0) = 1$, $x'(0) = -2$ using Laplace Transform

UNIT-IV

7. Show that $\nabla^2 \left(\frac{1}{r} \right) = 0$

OR

8. Evaluate the line integral of $\int_c (xy + y^2) dx + x^2 dy$ where 'c' is the square formed by the lines $y = \pm 1$ and $x = \pm 1$

UNIT-V

9. Evaluate by stoke's theorem for a vector field $\vec{F} = (2x - y)\vec{i} - yz^2\vec{j} - y^2z\vec{k}$ over the upper half surface of $x^2 + y^2 + z^2 = 1$ bounded by projection on xy-plane.

OR

10. Verify Green's Theorem in the plane for $\int_c [(3x^2 - 8y^2) dx + (4y - 6xy) dy]$ where 'c' encloses the region bounded by $y = \sqrt{x}$ and $y = x^2$
