5

2B1N23224 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

First Semester BVOC AUTOMOBILE Degree Examination, November 2023

SDC1AU02 – Basics of Electrical & Electronic Engineering

(2022 Admission onwards)

Time: 2 ½ hours Max. Marks : 80

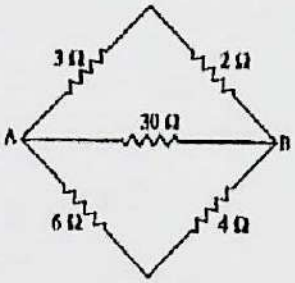
PART – A

Answer *all* questions.

Each question carries Two mark.

Ceiling -25 Marks

1. State and explain KVL in electric circuits?
2. Find the equivalent resistance of the given network?

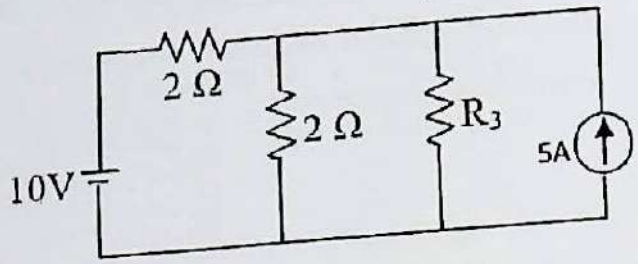


3. State and explain Maximum Power Transfer theorem.
4. State Lenz's law.
5. What is Tellegen's Theorem.
6. What is Flux intensity and Flux density in magnetic circuits?
7. What is Zener diode?
8. What is Band width and Q factor in resonance circuit?
9. Explain transistor biasing.
10. Draw the structure of NPN, PNP transistors with their symbols?
11. Explain the classification of oscillators.
12. Draw the block diagrams for open and closed loop systems.
13. Derive an expression to find frequency in an LC Oscillator.
14. Define communication?
15. Define modulation Index.

PART – B

Answer *all* questions.
Each question carries Five marks.
Ceiling -35 Marks

16. Find the current through $R_3 = 4\,\Omega$ resistance by mesh analysis.



17. Explain Thevenin's theorem.
18. Explain Series and Parallel resonance.
19. With diagram explain Hysteresis curve of Ferro magnetic material.
20. With the help of neat diagrams explain about the V-I characteristics of PN junction.
21. What is CB configuration of transistor? Also explain amplification factor and input-output characteristics.
22. Compare Hartley and Colpitt's oscillator. Also write the equations for frequency.
23. Describe about Analog and digital communication.

PART - C

Answer any *two* questions.
Each question carries Ten marks.

24. Explain the classification of magnetic materials with examples.
25. What is load line analysis? Explain the different regions of transistor characteristics.
26. With circuit diagram and waveforms explain half wave and full wave rectifier.
27. Explain differentiator, Integrator, summing Op-Amp circuits.

2 x 10 = 20 M

2B1N23225 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

First Semester BVOC AUTOMOBILE Degree Examination, November 2023

SDC1AU03 – Basic Mechanical Engineering

(2022 Admission onwards)

Time: 2 ½ hours Max. Marks : 80

PART – A
Answer *all* questions.
Each question carries Two marks.
Ceiling -25 Marks

1 What is the zeroth law of thermodynamics?

2 Define TER.

3 Why have multiple cylinders in an Engine? Why not have one big cylinder of the same displacement of the eight cylinders instead?

4 Why is the compression ratio of petrol engines low compared to diesel engines?

5 Define Manifold

6 Why don't diesel engines have spark plug?

7 Which pump requires priming? What is the need for it ?

8 Define a compressor.

9 Classify hydraulic Turbines.

10 Explain the working of window air conditioners.

11 What are the advantages of VCR?

12 Define Belt transmission system.

13 List out the advantages of Gear Transmission

14 Explain the function of Clutch.

15 Define Flux.

PART – B

Answer *all* questions.
Each question carries Five marks.
Ceiling -35 Marks

16 Compare heat engine and heat pump.

17 The efficiency of a carnot engine is 0.75. If the cycle di-rection is reversed, COP of the reversed Carnot cycle be?

18 Explain the major components of an automobile.

19 Briefly explain about MPFI.

20 Compare steam turbine with water turbine.

21 While selecting the refrigerant, point out the desirable properties you consider?

22 Write a note on the Casting process.

23 Write short notes on Gear trains.

PART - C

Answer any *two* questions.
Each question carries Ten marks.

24 Explain different thermodynamic processes.

25 Discuss the working of a Four Stroke SI Engine.

26 Explain thermal power plants in detail.

27 Explain working of any two non conventional manufacturing processes.

2 x 10 = 20 Ma

2B1N23226 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

First Semester BVOC SD Degree Examination, November 2023

SDC1IT01 – Discrete Mathematics

(2022 Admission onwards)

Time: 2 ½ hours Max. Marks : 80

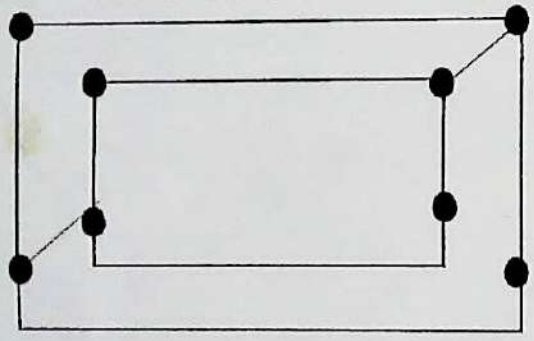
PART – A
All questions can be attended
Each question carries Two mark.
Ceiling -25 Marks

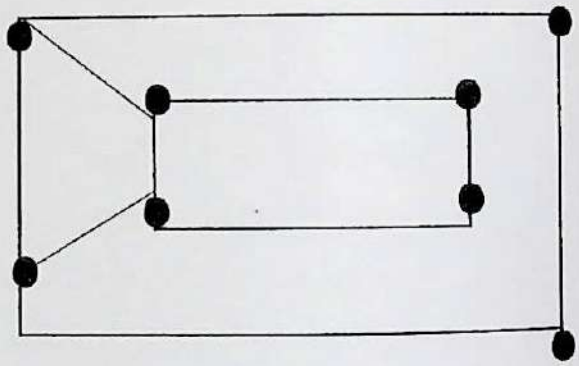
1. Define Conjunction with example.
2. Define Quantifiers.
3. What is mean by Equivalence Relation?
4. Define Set operations with Venn Diagram.
5. Define a) Walk b) Path c) Trial d) Circuit
6. Explain operations on a graph with example.
7. State and prove any two properties of Boolean Algebra.
8. Define Equivalence Class.
9. Find the GLB and LUB in Poset.
10. Prove Distributive law in logic using truth table?
11. Let S = {2,4,5,10,15,20} and the relation is divides. Find the relation and also find minimal and maximal elements.
12. Explain basic logic gates in Boolean Algebra.
13. Define a) Spanning Tree b) Branches c) Chord d) Pendent Vertex
14. Explain properties of Bi-Partite Graph.
15. Explain Vertex Coloring and Edge Coloring.

PART – B

All questions can be attended
Each question carries Five marks.
Ceiling -35 Marks

16. Explain various types of relations with example.
17. Let S= {2,3,5,7} and the relation R is inclusion of power set of S. Find
    a) Relation R
    b) Draw the Hasse Diagram
    c) Find the Maximal Element and Minimal Element
    d) Find the GLB and LUB of set {2,3}
18. Define Planar Graph. Is K_5 is planar or not? Justify.
19. Let $P(x) = |x| > 3$ and $Q(x) = x > 3$. Where domain is the set of real number. Determine the truth values of the statement $\forall x$, $(P(x) \rightarrow Q(x))$ is a tautology or not.
20. Prove that, a graph is a tree there is one and only one path between every pair of vertices.
21. Construct the truth table of the statement $P \rightarrow (Q \vee R) \vee (\neg P)$.
22. Define isomorphism between two graphs. Show that following graphs are not isomorphic





23. State and prove Max-flow Min-cut Theorem

PART - C

Answer any *two* questions.
Each question carries Ten marks.

24. a) Define Equivalence Relation.
    b) Explain Hasse Diagram
    c) Let X = {1,2,4,5,10,20} and the relation $\preceq$ be such that $x \preceq y$ if x divides y . Draw the Hasse Diagram of the poset and also find GLB and LUB of set {2,4}
25. Prove that, In any tree with two or more vertices, there are at least two pendent vertices.
26. Explain Kuratowski's two graphs in details.
27. Explain Adjacency matrix with an example.

2 x 10 = 20 Mar

8

2B1N23227 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

First Semester BVOC SD Degree Examination, November 2023

SDC1IT02 – Programming in C

(2022 Admission onwards)

Time: 2 ½ hours Max. Marks : 80

PART – A
All questions can be attended
Each question carries Two mark.
Ceiling -25 Marks

1 What is an entry controlled loop?

2 Why do we need to use comments in programs?

3 Describe about implicit type conversion?

4 Describe if else statement with the syntax?

5 Describe the use of enum in C?

6 Describe dynamic memory allocation in C?

7 What is preprocessor directive in C?

8 What is macro in C?

9 What is a variable, Write the syntax of variable declaration

10 Difference between fscanf() and scanf()?

11 What is an arithmetic expression?

12 Describe about low level language?

13 What is a user defined function?

14 What is the use of command line arguments in C?

15 Describe about tokens in C?

PART – B
All questions can be attended
Each question carries Five marks.
Ceiling -35 Marks

16 What is a flowchart? Draw a flowchart to find the largest of three numbers?

17 Explain structure of C program?

18 Explain about various data types used in C?

19 Write a C program to find the number of words in a sentence?

20 What is the use of break statement, Describe importance of break in switch statement with suitable example?

21 Differentiate between structure and union, Explain with suitable example?

22 What is pointer, Describe the usage of the pointer in C?

23 Explain different types of looping statements in C with syntax?

PART - C

Answer any *two* questions.
Each question carries Ten marks.

24 Explain different types of operators in C with examples

25 What is an array, with suitable example explain how a single dimensional and two dimensional arrays are declared, initialized and accessed?

26 Write a C program to write odd and even numbers into separate files?

27 Convert the following

a) $(128)_{10}$ = (.....)$_2$

b) $(111001)_2$ = (.....)$_{10}$

c) $(101001)_2$ = (.....)$_{16}$

d) $(108)_8$ = (.....) $_{10}$

e) $(189)_{16}$ = (.....) $_8$

2 x 10 = 20 Ma

3B1N23228

(Pages : 2)

Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

First Semester BVOC SD Degree Examination, November 2023

SDC1IT03 – Internet Programming

(2022 Admission onwards)

Time: 2 ½ hours

Max. Marks : 80

PART – A
Answer *all* questions.
Each question carries Two mark.
Ceiling -25 Marks

1. What do you mean by web server?
2. What is USENET?
3. What do you mean by SMTP?
4. Explain the syntax of any two form elements?
5. What is the difference between bulleted list and numbered list?
6. What is a hyperlink? How it is included in HTML?
7. What are the differences between ID selector and Class selector?
8. What are the kinds of alert boxes in javascript?
9. How text are decorated using CSS?
10. What do you mean by event handlers?
11. Explain what is Joomla?
12. List out the benefits of using Joomla?
13. Explain what are components in Joomla?
14. What is global configuration in Joomla?
15. What is Joomla Modules?

PART – B

Answer *all* questions.
Each question carries Five marks.
Ceiling -35 Marks

16. Write a short note about search engines?
17. Explain about DNS server and its function.
18. What is your understanding about frames?
19. Write about Check Box with example.
20. What is an event? Write an example code for on click event.
21. Explain decision making program constructs in javascript with examples
22. What is the use of Extension Manager in Joomla?
23. What is Menu Manager?

PART - C

Answer any *two* questions.
Each question carries Ten marks.

24. What is HTML table? List the tags used and its attributes. Write an HTML code for Creating Class time table using table tags.
25. Write a program for designing a simple calculator using Javascript code?
26. What is the need of an external css file? Give an example for linking external css with html page.
27. Explain Content Management System in Joomla?What is the use of Extension Manager in Joomla

2 x 10 = 20 M