LAKSHYA INSTITUTE OF TECHNOLOGY

BSC.ITM

3RD SEM OLD UNIVERSITY QUESTION

III - S - BCA - GE / IC - 3 -
(Business Accounting) - (R & B)

2024

Full Marks - 60

Time - As in the Programme

The figure in the right hand margin indicate marks.

Answer ALL questions.

Group - A

1. Answer all questions : [8 x 1 = 8

(a) _____ is the process of systematically recording financial transactions of a business.

(b) Assets that are expected to be converted into cash within one year are called _____.

(c) The financial statement that shows a company's financial position as of a specific date is the _____.

(d) Revenue is recognized when it is _____, irrespective of cash receipt.

(e) A _____ is a summary of all ledger accounts to check the mathematical accuracy of accounting entries.

[Cont....

(f) The principle that assumes a business will continue its operations in the foreseeable future is called the _____ principle.

(g) Expenses incurred but not yet paid are recorded as _____ liabilities.

(h) Goodwill, trademarks and patents are examples of _____ assets.

Group - B

2. Answer all questions : [8 x 1.5 = 12

(a) Define the term "trial balance."

(b) What is the main objective of financial accounting ?

(c) What is meant by the term financial accounting ?

(d) State the accounting equation.

(e) What is depreciation ?

(f) State the meaning of journal.

(g) What is balance sheet ?

(h) State the meaning of tangible assets with example.

[Cont....

Group - C

3. Answer any EIGHT questions : [8 x 2 = 16

(a) Describe the difference between profit and loss account and balance sheet.

(b) What is cash book ?

(c) State the key steps involved in generating accounting reports.

(d) What are the difference between gross profit and net profit ?

(e) What is contra entry ?

(f) State the causes of depreciation.

(g) Who are the external users of accounting information ?

(h) What is financial accounting ?

(i) Define GAAP.

(j) Describe the meaning of liability with examples.

Group - D

Answer all questions : [4 x 6 = 24

4.(a) State the differences between accounting and book keeping.

[Cont...

OR

(b) Discuss briefly the accounting standards.

5.(a) Following is the trial balance on 31st March 2010.

	Debit Balance	Credit Balance
Cash at bank	2,630	
Cash in hand	540	
Purchases	40,675	
Return inwards	680	
Wages	10,480	
Fuel and power	4,730	
Carriage outward	3,200	
Opening stock	5,760	
Premises	30,000	
Land	10,000	
Machinery	20,000	
Patents	7,500	
Salaries	15,000	
Sundry expenses	3,000	
Insurance	600	
Drawings	5,245	
Debtors	14,500	
Sales		98,780
Returns outward		500
Capital		71,000
Creditors		6,300
Total	**1,76,580**	**1,76,580**

[Cont...

Taking into consideration the following Adjustments, prepare trading account, profit and loss account and balance sheet.

1. Closing stock on 31st march Rs. 5,800.
2. Depreciation on machinery and patents by 10% and 20% respectively.
3. Salaries due for the month of December Rs. 1500.
4. Insurance policy expired on 30th September 2010.
5. Rs. 2,000 spent on erection of a shed were included in wages account.
6. Provide 5% on doubtful debt.
7. A fire occurred on 25th march 2010 in godown and stock of value of Rs. 100 was destroyed. It was fully insured and insurance company admitted the claim in full.

8.(a) Rs. 2,000 is to be transferred to reserve fund out of profit any way.

OR

(b) Explain the types of assets.

[Cont...

6.(a) Mr. Ramu has the following transactions in the month of July. Show postings in the ledger and balance the accounts.

July 1st : Ramu started business with a capital of 75,000

1st : Purchased goods from Manu on credit 25,000

2nd : Sold goods to Sonu 20,000

3rd : Purchased goods from Meenu 15,000

4th : Sold goods to Tanu for cash 16,000

5th : Goods retuned to Manu 2,000

6th : Bought furniture for 15,000

7th : Bought goods from Zenu 12,000

8th : Cash paid to Manu 10,000

9th : Sold goods to Jane 13,500

10th : Goods returned from Sonu 3,000

11th : Cash received from Jane 5,500

12th : Goods taken by Ramu for domestic use 3,000

13th : Returned Goods to Zenu 1,000

14th : Cash received from Sonu 12,000

15th : Bought machinery for 18,000

[Cont...

16th : Sold part of the furniture for 1,000

17th : Cash paid for the purchase of bicycle for Ramu's son 1,500

19th : Cash sales 15,000

20th : Cash purchases 13,500

OR

(b) Briefly explain the methods of depreciation.

7.(a) State the important provisions of company act.

OR

(b) State the salient features and significance of computerized accounting system ?

III - S - B.Sc. - (ITM) - Core - VII -
(Bus. Acct.)

2019

Full Marks - 70

Time - As in the Programme

The figures in the right hand margin indicates mark.

Answer All questions.

SECTION - A

1. Answer the following questions. [1×10

(a) Bank account is _____ accounts.

(b) Goodwill can be classified as _____ assets.

(c) Depreciation is charged on _____ assets.

(d) Bank overdraft is _____ liability,

(e) What is the formula of current ratio ?

(f) What are the two sides of balance sheet ?

(g) Receipts and Payments Accounts is prepared from the _____.

(h) Depreciation is caluculated on the basis of _____ price.

(i) A balance sheet discloses the _____ position of the firm.

[Cont...

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(j) Golden rule of personal account is debit the receiver & credit the _____.

SECTION - B

2. "Accounting is an information system", Justify it. Discuss about users of accounting system. [8

OR

Define subsidiary books. Discuss different types of subsidiary books. [8

3. What is Bank reconciliation statement ? What are the causes of disagreement between Cash book and pass book ? Prepare bank reconciliation statement taking imaginary transactions. [8

OR

Define depreciation. Explain various causes of depreciation. [8

4. Define Joint Stock Company. Explain its advantages and disadvantages. [8

OR

(a) Differentiate between Profit & Loss Account and Trading Account.. [4

[Cont...

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(b) Explain the contents of a Corporate Annual Report. [4

5. What do you mean by financial statement analysis ? Discuss its objectives. [8

OR

Define ratio. Discuss different types of ratio. [8

6. Define accounting concepts and accounting conventions. [8

OR

Journalise the following transactions. [8

(i)	Mohan started business with cash	Rs. 50,000/-
(ii)	Cash Sale	Rs. 20,000/-
(iii)	Salaries Paid	Rs. 5,000/-
(iv)	Rent received	Rs. 1,000/-
(v)	Purchases furniture for cash	Rs. 1,000/-
(vi)	Purchases plant from Shyam on credit	Rs. 10,000/-
(vii)	Sold goods to Ram on credit	Rs. 3,000/-
(viii)	Paid to Ram	Rs. 7,000/-
(ix)	Outstanding Rent	Rs. 500/-
(x)	Received cash from Ram	Rs. 4,000/-

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III - S - BCA - Business Accounting Tutorial

(GE / IC - 3)

2021

Full Marks - 60

Time - As in the Programme

The figure in the right hand margin indicates marks.

Group - A

Answer ALL questions. [8 × 1

1.a) Define the term Book Keeping.

b) What is called Accounting ?

c) What do you mean by final account ?

d) What is the abbreviation of GST.

e) What do you mean by Loss account ?

f) Define term liability.

g) What do you mean by ledger ?

h) Define owner's equity.

Group - B

2. Answer Any EIGHT : [8 × 1.5

(a) Name two user of accounting information.

(b) Write the limitations of Financial Accounting.

(c) Name two accounting software .

(d) State the importance of depriciation ?

(e) Define Bank Reconciliation Statement ?

[PTO....

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(f) Give two examples oftransaction ?

(g) Give an example of thing which is not included in Bank Reconciliation Statement ?

(h) What's the Accounting convention ?

(i) What is the revenue recognition principle ?

(j) State any two advantages of Financial Accounting.

Group - C

3. Answer Any EIGHT : [8 × 2

a) What are the generally accepted accounting principles (GAAP) ?

b) What is the fair value principle ?

c) What is basic accounting equation ?

d) State types of users of accounting information.

e) What are the three functions of accounting ?

f) State any two objectives of Financial Accounting.

g) Define the term Financial Accounting.

h) Define the term Ledger .

i) Differentiate between Debit and Credit.

j) State the advantages of Cash Book.

k) What are the branches or types of accounting ?

l) What are the main advantages of accounting ?

[Cont....

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Group – D

UNIT - I

1) Explain the objectives of Financial Accounting [4 × 6

OR

2) Explain different Accounting principles in brief.

UNIT - II

1) The following balances were extracted from the ledger of Mr.Sachin as on 31st March 2021. You are required to prepare a trial balance as on that date.

Balances	
Drawings	60,000
Salaries	95,000
Capital	4,40,000
Sales return	10,000
Sundry creditors	2,30,000
Purchases return	11,000
Bills payable	40,000
Commission paid	1,000

[Cont...

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Sundry debtors	5,00,000
Trading expenses	25,000
Bills receivable	52,000
Discount earned	5,000
Plant & Machinery	45,000
Rent	20,000
Opening stock	3,70,000
Bank overdraft	60,000
Cash in hand	9,000
Purchases	7,08,000
Cash at bank	25,000
Sales	11,80,000
Investment	46,000
Closing Stock	80,000

OR

2) What is the importance of depreciation ? Explain the methods of charging depreciation.

[Cont...

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UNIT - III

Following is the Trial Balance of Rajesh Ltd., Gurgaon as on 31.12.2009.

Particulars	Debit (Rs.)	Credit (Rs.)
Share capital (8000 shares of Rs. 10/- each)	—	80000
Stock on 1.1.2009	51000	—
Purchases and sales	220000	330000
Returns	3800	—
General Expenses	1800	—
Wages	12000	—
Salaries	18700	—
Travelling Expenses	3200	—
Advertisement	1550	—
Rent and Taxes	4900	—
Discount Received	—	2200
Bank Interest	850	—
Bad Debts	2500	—
Buildings	95000	—
Plant and machinery	98000	
Sundry Debtors and Creditors	45000	55500
Loan	—	25000
Cash	1400	—
Reserve Fund	—	23000
Preliminary Expenses	11000	—
Profit and Loss Account (Cr.)	—	5500
	570700	**570700**

[Cont...

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PARTICULARS	DEBIT. (Rs.)	CREDIT (Rs.)
Capital		10,000
Creditors		1,200
Return outwards		500
Sales		16,400
Bills Payable		500
Plant and machinery	4,000	
Sundry debtor	2,400	
Drawings	1,000	
Purchases	10,500	
Return inwards	300	
Wages	5,000	
Bank	1,000	
Repair	50	
Stock (1-4-2013)	2,000	
Rent	400	
Manufacturing expense	800	
Trade expense	700	
Bad debts	200	
Carriage	150	
Fuel and power	100	

Adjustments :

(i) The closing stock was valued at Rs. 1,450/-.

(ii) Depreciation on plant and machinery @ 10% p.a.

(iii) Allow 5% interest on capital.

(iv) A sum of Rs. 40 is due for repair.

(d) Briefly explain the special features of company final accounts.

OR

Explain the applications of computers in accounting.

2023

Full Marks - 60

Time - As in the Programme

The figures in the right hand margin indicate marks.
Answer ALL questions.

1. Answer the following questions : [1 x 8 = 8

(a) What is book keeping ?

(b) What is the process of recording transactions from journal to ledger ?

(c) Cash discount is allowed on _____ sales.

(d) Contra entry will be passed in which columns of cash book ?

(e) What is the value of depreciation in straight line method ?

(f) The contributions made by owner is known as _____.

(g) What is balance sheet ?

(h) The trading account reveals _____ during the year.

2. Answer any EIGHT of the following questions : [1.5 x 8 = 12

(a) What are direct expenses ?

(b) What is gross profit ?

[Cont...

(c) Define Palmtop.
(d) What is accrual basis accounting ?
(e) What do you mean by trial balance ?
(f) Write notes on money measurement concept.
(g) What is day book ?
(h) Write two examples of wasting asset.
(i) What is narration ?
(j) Write two examples of real account.

3. Write short notes : [2 x 8 = 16

(a) Explain in brief different branches of accounting.
(b) Explain the traditional rules of journal.
(c) What do you mean by depletion ?
(d) What do you mean by accounting cycle ?
(e) Write notes on obsolescence.
(f) Distinguish between trial balance and balance sheet.
(g) Write notes on trade discount.
(h) Define accounting equation.
(i) State relationship with journal and ledger.
(j) Distinguish between SLM and WDV.

4. Answer any FOUR of the following questions : [6 x 4 = 24

(a) State in brief about various concepts of accounting.

OR

Journalize the following transactions in the books of SATISH :

[Cont...

2018

July - 1 He commenced business with cash Rs. 1,00,000/-.
July - 3 Purchased goods worth Rs. 80,000/-.
Jan - 7 Cash Sales Rs. 90,000/-.
Jan - 11 Received Rs. 2,900/- from SAHA and allowed him discount Rs. 100/-.
Jan - 17 Furniture purchased from Anu & co. Rs. 15,000/-.

(b) A merchant purchased a machinery for Rs. 2,00,000 on 1-4-2018. Depreciation is charged @10% p.a on reducing balance method. On 31st March 2021, the machinery was sold for Rs. 1,25,000/- Prepare machine account.

OR

What do you mean by bank reconciliation statement ? What are the reasons for disagreement of between the cash book balance and pass book balance.

(c) What do you mean by adjustments ? Pass necessary adjusting entries related to (i) closing stock (ii) outstanding expense (iii) prepaid expense (iv) interest on capital.

OR

Prepare trading and profit and loss account and balance sheet from the following balances, relating to the year ending 31st March 2014 :

[Cont...

BCA 3rd Sem
B.A. C 25.01.24

III - S - BCA - GE / IC - 3 - (Bus. Acc.) - (NC)

2023

Full Marks - 60

Time - As in the Programme

The figures in the right hand margin indicate marks.

Answer ALL questions.

Group – A

1. Answer all the questions : [8 x 1

(a) _____ are debts payable in future by the firm to its creditors.

(b) _____ is the life blood of every business.

(c) Net Profit / Loss is transferred to the _____ account.

(d) The difference between the current asset and current liability is _____.

(e) _____ refers to the firm's ability to pay debts as they mature.

(f) The _____ and _____ are two closely related investment criteria.

(g) _____ is a person or enterprise that owes money to another party.

(h) Those assets, whose value is constantly changing as the business proceeds like stock, debtors etc. are called _____ assets.

[P.T.O.

Group – B

2. Answer any EIGHT questions : [8 x 1.5

(a) State two objectives of accounting.

(b) What is Book-Keeping ?

(c) What is Accounting Period Concept ?

(d) Give the full form of ASB and IFRS.

(e) What is Journal Proper ?

(f) Write two objectives of providing depreciation.

(g) Give two examples of fictitious assets.

(h) What is the difference between bad debts and provision for bad debts ?

(i) Name two accounting software package.

(j) Define Accounting as an information system.

Group – C

3. Answer any EIGHT questions : [8 x 2

(a) Give two differences between Accounting and Book-Keeping.

(b) Explain the scope of accounting.

(c) What is the significance of matching concept.

(d) What do you mean by Cash Basis of Accounting ?

(e) What do you mean by Subsidiary Books ?

(f) Name any four methods of providing depreciation.

(g) Explain the meaning of Balance Sheet.

(h) What is Contingent Liability ?

(i) Explain the concept of Grouping of Accounts.

(j) Why do the business firms use accounting software ?

[Cont...

Group – D

Answer all : [4 x 6

4. Define Accounting. Discuss the functions and limitations of accounting.

OR

Define GAAP. Discuss any three concepts.

5. What is the need for sub division of journal ? Discuss the types of cash book.

OR

Define Trial Balance. What is the objective of preparing it ? Explain the methods of preparing the trial balance.

6. From the following trial balance of XYZ Ltd. prepare Trading, P/LA/C and Balance Sheet at the year ended 31.03.2023. Closing stock at the year ended 31.03.2023 is ₹ 50,000.

Particulars	Amount (₹)	Particulars	Amount (₹)
Plant and Machinery	4,50,000	Sales	11,00,000
Purchases	6,20,000	Capital	7,00,000
Land & Building	8,50,000	Purchase return	5,000
Opening stock	75,000	Creditors	65,000
Carriage inwards	25,000	Loan	10,00,000
Carriage outwards	25,000	Bills payable	80,000
Salary &Wages	2,50,000	Bank overdraft	50,000
Power &Fuel	35,000		
Productive wages	55,000		
Sales return	12,000		
Insurance	13,000		
General expenses	25,000		
Debtors	55,000		
Furniture	1,50,000		
Drawings	20,000		
Bills receivable	40,000		
Cash in hand & at Bank	3,00,000		
TOTAL	30,00,000	TOTAL	30,00,000

[Cont...

OR

What do you mean by Marshalling of Balance Sheet ? Briefly explain the content of balance sheet with proforma of a balance sheet.

7. Give a specimen format of preparing Profit and Loss statement as prescribed under Companies Act, 2013.

OR

Discuss the salient features and significance of computerized accounting.

VI - S - B.Sc. - ITM - P - Core - 14 -
(Computer Network) - (R&B)

2025

Full Marks - 60

Time - As in the Programme

The figure in the right-hand margin indicates marks

Answer all questions

1. Answer any eight of the Questions. [1 × 8 =8

   (a) What is Ethernet ?

   (b) What is parity checker ?

   (c) What is bit rate ?

   (d) What is the IEEE standard for Bluetooth ?

   (e) Define computer network.

   (f) What is switch ?

   (g) What do you mean by bandwidth ?

   (h) What is non periodic signal ?

   (i) Define DSL.

2. Answer any eight of the following Questions. [1.5 × 8=12

   (a) Define PPP.

   (b) What is the function of Physical Layer of OSI model ?

[Cont...

(c) Distinguish between Noiseless and Noisy Channel.

(d) What is the function of Router ?

(e) What is SMTP ? Where this protocol is used ?

(f) What is Guided Medium ?

(g) What is framing ?

(h) Define CRC.

(i) What is MODEM ?

(j) What do you mean by Frame Relay ?

3. Answer the following Questions. [2 × 8=16

(a) Write the use of public key cryptography.

(b) Write the use of repeater.

(c) What do you mean by flow and error control ?

(d) What is Multiplexing ? Why it is used ?

(e) Write packet switching mechanism.

(f) What is digital to analog conversion ?

(g) What is datagram network ?

(h) What is point to point protocol ?

(i) Explain the need of authentication ?

(j) How do you know a channel as noisy ?

4. Answer any four of the following Questions. [6 × 4=24

(a) Discuss different types of signal conversion use in a network.

OR

[Cont...

Write the uses of different types of network devices and drivers.

(b) Briefly explain different types of transmission media used in computer network ?

OR

Discuss different types of switching techniques used in Computer Network.

(c) What is error detection ? How it is corrected ?

OR

How TCP and UDP contributed in process-to-process delivery of data packets ?

(d) What is network security ? How Digital signature and certificate control the security aspects ?

OR

Write short notes of any two.

(i) Private key

(ii) TDM

(iii) Topology

(iv) Layers in OSI model

6th - S - B.Sc. - (ITM) -

(Computer Network) - Core - 14

2022

Full Marks - 60

Time - As in the Programme

Answer ALL questions.

1. Answer any EIGHT of the questions : [1 x 8 = 8

(a) What is Wavelength ?

(b) What do you mean by band-width ?

(c) What is Parity-checker ?

(d) What do you mean by Throughput ?

(e) What is bit-rate ?

(f) Define Baud-rate.

(g) What is Periodic signal ?

(h) What is non-periodic signal ?

(i) Define Naquest Principle.

(j) Define Shanon's Theorem.

[Cont...

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2. Answer any EIGHT of the following questions : [1.5 x 8 = 12

(a) What do you mean by Frame Relay ?

(b) What is Multiplexing ? What are the types o multiplexing used in computer network ?

(c) Define CRC.

(d) What is Data Modulation ?

(e) Differentiate between node and link.

(f) What makes a network efficient and effective ?

(g) What is the use of session of layer of OSI Model ?

(h) Discuss the use of router ?

(i) What are the transmission modes in a network ?

(j) What is the use of special addresses in computer network ? What are they ?

3. Answer the following questions : [2 x 8 = 16

(a) What is Internetworking ?

(b) Explain the need of authentication.

(c) What are the responsibilities of Data-link layer ?

[Cont...

(d) What is Transmission impairment ?

(e) Discuss the use of SMTP protocol

(f) What is congestion control ? Wh use this ?

(g) Discuss the use of sliding windo

(h) What is unguided media ?

4. Answer any FOUR of the follo

(a) Explain ISO-OSI model of co a suitable neat diagram.

OR

Describe different types of diagrams.

(b) Make a differentiation b logical address & a phys

OR

Discuss different types their advantages.

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(d) What is Transmission impairment ?

(e) Discuss the use of SMTP protocol.

(f) What is congestion control ? Which layer of OSI use this ?

(g) Discuss the use of sliding window.

(h) What is unguided media ?

4. Answer any FOUR of the following questions : [6 x 4 = 24

(a) Explain ISO-OSI model of computer network with a suitable neat diagram.

OR

Describe different types of Topologies with suitable diagrams.

(b) Make a differentiation between Port address, a logical address & a physical address.

OR

Discuss different types of switching techniques and their advantages.

[Cont...

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(c) Discuss the difference between functional requirement and non-functional requirement. Write the functional requirement to withdraw cash from ATM.

OR

Explain how digital signature is used for secured transmission of data.

(d) Define Channelization. Discuss types of Channelization with their advantages.

OR

Write notes on following description (Answer any TWO) :

(i) Virtual Circuit Network.

(ii) Noiseless Channels.

(iii) Differentiate between UDP & TCP.

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2023

Time :As in Programme

Full Marks : 60

The figures in the right-hand margin indicate marks.

*Answer **all** questions.*

PART-I

1. Fill in the blanks or answer in one word. 1x8

   a. TCP/IP protocol suite has ____ numbers of layers.

   b. The Network device that enhances the signal strength during transmissions, is called ____,

   c. There exist ____ numbers of transmission modes in data communications.

   d. ____ guided media has great potential for high speed internet service.

   e. The line encoding scheme Bipolar-AMI is the acronym of ____.

   f. HDLC stands for ____.

   g. The transport layer has two sub layers, such as ____ and ____.

   h. UDP stands for ____.

PART-II

2. Answer any eight within two to three sentences. 1.5x8

   a. What is bandwidth ?

   b. State the three properties of any analog signal.

   c. State the name of all line encoding schemes.

   d. State the formula of Shannon and Nyquist for channel capacity calculations.

   e. What is the unit measure of internet speed ?

   f. How public keys differ from public keys.

   g. What is digital signature ?

   h. State the name of the protocols that operate at the application layer.

   i. State the name of the network device that operates at the Transport layer.

   j. What is CSMA/CD ?

PART-III

3. Answer any eight of the following (in maximum 75 words.) 2x8

   a. Distinguish between Switch and Bridge.

   b. How do routers work in a computer network ?

   c. Briefly describe the functionality of ASK, PSK and FSK.

   d. Explain the functionality of all bipolar line encoding schemes.

   e. What is a parity bit ? How does it work ?

   f. What is the functionality of MAC sublayer ?

   g. Distinguish between X.25 and Frame Relay.

   h. What is an ATM Network ?

i. Differentiate between datagram approach and virtual circuit approach of a packet switched network.

j. What is an Error in data transmission ? Describe the different types of error and how they can be detected ?

PART-IV

Answer within 500 words each. 6x4

4. Evaluate the channel capacity of a noisy channel, whose spectrum operates between 2MHz to 7MHz, where SNRdB=24dB.

OR

State and explain the functionality of all layers of OSI reference model.

5. Distinguish between Packet Switched Network and Circuit switched Network.

OR

What is Flow control ? Explain Sliding window and Selective reject flow control technique.

6. Calculate the value of FCS, then find the CRC if P=110011 and M=11100011.

OR

State and explain the fields of an ATM cell and explain 2 methods of transmitting cells.

7. What is an IP address ? Compare IPv4 address with IPv6 address.

OR

Distinguish between Stateless protocol and Stateful Protocol.

VI - S - B.Sc. - (ITM) - Core - 14 - (Computer Network) - (NC)

2024

Full Marks - 60

Time - As in the Programme

The figure in the right hand margin indicate marks.

Answer ALL questions.

1. Answer any EIGHT of the questions :[1 x 8 = 8
   (a) Define computer network.
   (b) What is Switch ?
   (c) What do you mean by protocol ? Give some examples.
   (d) Define DSL.
   (e) What is Ethernet ?
   (f) What is ATMLAN ?
   (g) What is block coding ?
   (h) What is the IEEE standard for Bluetooth ?
2. Answer any EIGHT of the following questions : [1.5 x 8 = 12
   (a) What is Dial-up Connection ?
   (b) Define PPP.
   (c) Distinguish between Node and Link.

[Cont...

(d) Distinguish between Noiseless and Noisy Channel.

(e) What is Redundancy ?

(f) Explain the need of authentication.

(g) What is Guided Medium ?

(h) What is DNS ?

(i) Define CRC.

(j) What is MODEM ?

(k) What is SMTP ? Where this protocol is used ?

3. Answer the following questions : [2 x 8 = 16

(a) What is Multiplexing ? Why it is used ?

(b) What is Bridge ? Write its two functions.

(c) What is SONET ? Name the layers associated with it.

(d) What is V-LAN ?

(e) What is Gigabit Ethernet ?

(f) How Data transmission is done through Cable TV network ?

(g) Explain the advantages of wireless LANS.

(h) What is UDP ?

(i) Distinguish between TDMS and CDMA.

(j) What are the types of error correction methods ?

[Cont...

4. Answer any FOUR of the following questions : [6 x 4 = 24

(a) Describe the function of Physical and Data link layer of OSI Model.

OR

Describe the different Layers of TCP/IP.

(b) What are the Switching techniques used in Computer Network ? Explain.

OR

Explain about different types of transmission media in computer network.

(c) What is Addressing ? How addressing is done over Internet ?

OR

Explain flow control mechanism in detail.

(d) How error detection and correction carried out ? Discuss with example.

OR

Write short notes of any TWO :

(i) HTTP

(ii) IPv6

(iii) Topology

IV - S - BCA - CC - 9 -

(COMPUTER NETWORKS)

2022

Full Marks - 60

Time - As in the Programme

The figure in the right hand margin indicate marks.

Answer ALL questions.

Group - A

1. Answer all questions : [8 x 1

(a) OSI stands for _____.

(b) _____ layer provides service to the user.

(c) HUB is a _____.

(d) HTTP stands for _____.

(e) Data communication system with in a building or campus is _____.

(f) The length of IPV4 address is _____.

(g) Fiber optical cable is _____.

(h) DNS stands for _____.

Group – B

2. Answer all questions : [8 x 1.5

(a) Which network device is used in network layer ?

(b) What are the possible ways of data exchange ?

[P.T.O...

(c) Explain the function of repeater.

(d) What is CRC ?

(e) Explain the term bit rate.

(f) HDLC is implemented in which layer of OSI model ?

(g) What is node ?

(h) What is error detection ?

Group – C

3. Answer any 8 questions : [8 x 2

(a) Explain different modes of data transmission.

(b) Define network topology.

(c) What are the criteria necessary for an effective & efficient network ?

(d) What are the key elements of a protocol ?

(e) What is multiplexing ?

(f) Differentiate between circuit switching and packet switching ?

(g) What is error ? What are the types of error ?

(h) What is the difference public key and private key ?

(i) Explain digital signature.

(j) What is Redundancy ?

[Cont...

Group – D

Answer all questions : [4 x 6

4.(a) What is computer network. Explain different types of network.

OR

(b) Describe the functions of physical layer and data link layer in OSI model.

5.(a) What is digital transmission ? What are the techniques of digital to digital conversion. Explain in detail.

OR

(b) Explain about different types of transmission media in computer network.

6.(a) What are the various types of error correcting technique ? Explain in detail.

OR

(b) Write short notes on HDLC.

7.(a) Write short notes on :

(i) www

(ii) FTP

OR

(b) Explain in detail TCP/IP model in detail.

6.(a) Explain circuit diagram, truth table for JK flip flop ?

OR

(b) Write short note on :

(i) FPGA

(ii) Edge Triggering

7.(a) What is Dynamic RAM ? Explain Synchronous RAM and Asynchronous RAM ?

OR

(b) Define different type of Memory ? Explain each one in brief.

2023

Full Marks - 60

Time - As in the Programme

The figures in the right hand margin indicate marks.
Answer ALL groups as per instructions.

Part – I

1. Answer all question : [1 x 8 = 8

(a) The output of XOR gate with two input 1 and 0 is _____.

(b) The RS flip flop gives invalid output for _____ input combination.

(c) What are the universal logic gates ?

(d) What is the full from of S-R flip-flop ?

(e) Expand PROM.

(f) Convert (8867) 10 to binary conversion.

(g) State the De Morgan Theorem.

(h) What do you mean by Latch ?

[Cont...

Part – II

2. Answer any EIGHT questions : [1.5 x 8 = 12

(a) Why RAM is called a volatile memory ?

(b) What is difference between sequential and combination circuit ?

(c) Construct the block diagram of NOR gate ?

(d) Differential between PROM and EPROM.

(e) Construct the circuit diagram of D - flip flop ?

(f) State any two features of counter.

(g) Differential between SRAM and DRAM ?

(h) What is Register ?

(i) Define flip-flop and its type.

(j) Write down XNOR gate truth table ?

Part – III

3. Answer any EIGHT questions : [2 x 8 = 16

(a) Define RAMBUS memory ?

(b) Draw the circuit diagram, truth table of RS flip-flop ?

(c) Explain Tri-state Buffer ?

(d) Write down the method of access of a Magnetic tape ?

[Cont...

(e) Convert (AE.FA) Hexadecimal number to octal number ?

(f) Discuss Shortly on PLD ?

(g) What is the Function of Decoder ?

(h) Discuss Shortly on Guard bit ?

(i) Short note on PAL (Programmable Array Logic) ?

(j) Define Flash Memory ?

Part – IV

Answer all questions : [4 x 6 = 24

4.(a) Briefly discuss different Logic Gates used in computer system with examples and diagrams.

OR

(b) Explain Karnaugh Map ? Minimize the Boolean function

$F(A, B, C, D) = \Sigma m(0, 1, 2, 5, 7, 8, 9, 10, 13, 15)$

5.(a) State and explain Booth Algorithm with suitable example and diagram ?

OR

(b) Explain Carry save addition with suitable example ?

[Cont...

(TH.): DIGITAL LOGIC
UG Sem. - I, Sub: BCA, Paper: CC-I
Full Marks – 60, Time – 3 hrs.
Year - 2021

Answer ***all groups*** as per instructions.
Figures in the right hand margin indicate marks.

PART–I

1. Answer *all* questions. [1 × 8 = 8]
   a) Convert, $(1110101100)_2$ = (_____)$_{16}$.
   b) The output of a XOR gate with two inputs 0 and 0 is _____.
   c) Booth algorithm used for _____ operation on binary numbers.
   d) An 8-bit word can represent the numbers in 2's complement format ranges from ____ to ____.
   e) The RS flip-flop gives invalid output for _____ input combinations.
   f) A multiplexer has _____ input lines and _____ output lines.
   g) RAMBUS memory stands for _____.
   h) Which of the following is a primary memory?
      i) RAM ii) PROM iii) Cache memory iv) All of these

PART–II

2. Answer *any eight* questions. [1.5 × 8 = 12]
   a) What do you mean by Boolean algebra?
   b) $(AE.FA)_{16}$ = (_____)$_8$.
   c) Which gates are known as universal gates? Justify your answer.
   d) Write down the truth table for XNOR gate.
   e) Stepwise calculate the 2's complement of $(-16)_{10}$.
   f) What is overflow condition in addition of 2's complement numbers?
   g) What is the function of a decoder?
   h) Define latch.
   i) Write down the method of access of a magnetic tape.
   j) What is the difference between SRAM and DRAM?

PART–III

3. Answer *any eight* questions. [2 × 8 = 16]
   a) Define tri-state buffer.
   b) Define De Morgan's Law. Prove it by using suitable method.
   c) Simplify the following Boolean function using K-map.
      $$f(A, B, C, D) = \sum m(0, 1, 2, 8, 9, 10, 11, 13, 15) + d(5, 7)$$
   d) Write down shortly the fast multiplication.
   e) Illustrate shortly Carry-Lookahead Addition.
   f) Discuss shortly on PLDs.

g) Combinational circuit v/s Sequential circuit.
h) Illustrate UP/DOWN Counter with suitable diagram.
i) Define flash memory with its advantages and disadvantages.
j) Discuss shortly on speed, size and cost parameters of memory hierarchy with suitable diagram.

PART–IV

Answer ***all*** questions.

4. *Briefly discuss different Logic Gates used in computer system with suitable examples and diagrams. [6]*

OR

Write short notes on the followings: [3 + 3 = 6]
   i. Character codes v/s weighted binary code
   ii. Synthesis of logic function with suitable example

5. What do you mean by floating point numbers? Briefly discuss IEEE standards for representation of floating point numbers in computer with suitable examples and diagrams. [1 + 5 = 6]

OR

Write short notes on the followings: [3 + 3 = 6]
   i. Bit-pair recoding multiplier
   ii. Addition/subtraction logic unit

6. What do you mean by Flip-flop? Briefly explain circuit diagram, truth table and characteristic equation for JK Flip-flop with suitable diagram. [1 + 5 = 6]

OR

Write short notes on the followings: [3 + 3 = 6]
   i. Shift register
   ii. Finite state machine model

7. Discuss the organization of a magnetic hard disk along with procedure of read/write operations. [6]

OR

Discuss shortly on Read-Only Memories (ROM, PROM, EPROM and EEPROM). [6]

2023

Time :As in Programme

Full Marks : 60

The figures in the right-hand margin indicate marks.

*Answer **all** questions.*

PART-I

1. Answer the following questions. 1x8

   a. Hexadecimal Numbers notation has base ____.

   b. If we convert the decimal number $(7)_{10}$ into octal, then it will be ____.

   c. Each combination of variables in a truth table is called ____

   d. DeMorgan's theorem is important in dealing with ____ and ____ gates.

   e. State any one basic identities of Boolen algebra.

   f. D flip-flop is a slight modification of ____ flip-flop.

   g. CMOS stands for ____.

   h. If the register is capable of shifting its binary information in both direction, it will be called as ____ register.

PART-II

2. Answer any eight within two to three sentences. 1.5x8

   a. What is ROM ? State and define the types of ROM.

b. State the secondary storage devices.

c. What is RAM ? State the operations a RAM could perform.

d. What multiplexer does ?

e. What do you mean by Latch ?

f. What is Register ? State register with parallel load.

g. Simplify the following expression using Boolean algebra:

i. A + AB

ii. AB + AB'

iii. A'BC + AC

h. Construct the block diagram of NOR gate ?

i. Construct the circuit diagram of SR Latch ?

j. State Idempotent Law of Boolean algebra.

PART-III

3. Answer any eight of the following (in maximum 75 words.) 2x8

a. Design an 8x1 Multiplexer using 4x1 Multiplexer.

b. Differentiate between DRAM and SRAM.

c. State the key features of Cache Memory.

d. Differentiate between Cache Hit and Catch Miss ?

e. What do you mean by Race around condition in J-K flip flop.

f. Differentiate between full-adder and half-adder.

g. What is the primary objective of the edge-tirggered flip flop.

h. What is Field-Programmable Gate Array (FPGA) ?

i. What is RAMBUS memory ?

j. State an example to illustrate, why you need a Guard bit, in addition to the Round and sticky bits.

PART-IV

Answer within 500 words each. 6x4

4. State and explain the different types of Logic Gates ? State the functionality of each one with its block diagram and truth table.

OR

Minimize the following Boolean function - F(A, B, C, D) = $\sum$ m(0, 1, 3, 4, 8, 9, 10, 13, 15).

5. Differentiate between half adder and full adder. Construct the circuit diagram and truth table of full adder and also state the simplified Boolean expression for full adder.

OR

Multiply each of the following pairs of signed 2's complement numbers using the Booth's algorithm, assume that X is the multiplicand and Y is the multiplier.

i. X = 110101 and Y = 011011

ii. X = 010111 and Y = 110110

iii. X = +14 and Y = -13

6. What are the different types of Shift Register ? Explain each one in brief with its block diagram.

OR

State the different types of Flip Flops ? Explain each with its circuit diagram, truth table and characteristics equation.

7. Explain Finite State Machine Model. State the synthesis of finite State Machine.

OR

State the different types of memory used in computer system ? Explain each one in brief.

2023

Full Marks - 60

Time - As in the Programme

The figure in the right hand margin indicate marks

Answer All question.

Group-A

Answer all the questions :

1. What are basic properties of Boolean algebra?
2. State the absorption law of Boolean algebra.
3. What are the characteristics of Digital Systems.
4. Expand the term IEEE.
5. Find the 2's complement of the number (1011001101)2
6. Convert (101.01)2 to decimal point.
7. Construct OR gate using NAND gate.
8. Write the logic expression for Full adder.
9. Expand PROM.
10. Write down the characteristic table of JK.

Group-B

Answer any eight questions

1. What is edge triggered flip fops?
2. Convert T Flip Flop to D Flip Flop?
3. Explain the need of Hexadecimal number system.
4. Draw the logical diagram and truth table of half substractor.
5. What is the difference between carry generate and carry propagate?
6. Explain the need of flip flops.
7. Explain the need of counters.
8. Convert 37710 to octal and hexadecimal equivalents.
9. Minimize the function 5 ϕ NÜ (5 ϕ OÜ + 5 ϕ OÜ 5 ϕ PÜ2) + 5 ϕ NÜ5 ϕ OÜ2.
10. Define sequential circuits.

Group-C

Answer any eight questions

1. What is De'Morgan's Law? Prove it by using suitable method.
2. Give the comparisan between synchronous and asynchronous counters.
3. Write the multiply rule for a floating point number?
4. Give the characteristic equation and characteristic table of SR flip-flop.
5. Difference between combinational and sequantial circuits.
6. Write the steps for bit-pair recoding of multipliers.

7. Define ASCII Code. What is the use of ASCII code in input/out devices?
8. Which gates are referred as universal gates. Explain why.
9. What is master-slave flip-flop?
10. Give one application each Multiplexer and Decoder

Group-D

Answer all questions

1. Explain the concept of K-map and simplify the following

   y= C'(A'B'D' + D) + AB'C+D'.

   OR

   Briefly discuss different Logic Gates used in computer system with suitable examples and diagrams.

2. Write a neat block diagram and discuss about full adder. Find out the logic diagramand functional table.

   OR

   Write a neat block diagram and discuss about full adder. Find out the logic diagram and functional table.

   OR

   Write short notes of the following:-

a) Floating point number

b) Booth Algorithm

3. Stae the types of filpflops used in a processor.

   OR

   Short notes on the following:-

a) Multiplexers.

b) Programmable Array Logic (PAL)

4. Define ROM. Explain it's classifications.

   OR

   Short notes on the following:-

a) Secondary storage device

b) Synchronous DRAMS.

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2022

Full Marks - 60

Time - As in the Programme

The figure in the right hand margin indicate marks

Answer All question.

Group-A

1. Answer all

a) Can we use full adders for adding $(0011)_2$ and $(001)_2$?

b) What do you mean by Latch?

c) State De Morgan's Theorem.

d) $(1111001)_2 = (\quad)_8$.

e) What is the full from of S-R flipflop?

f) $(11110011001110000 1001)_2 = (\quad)_{16}$.

g) $(10010101)_2 = (\quad)_{10}$.

h) What are the universal logic gates?

Group -B

2. Answer any 8

a) Design an 8x1 Multiplexer using 4x1 Multiplxer.

b) Why RAM is called as a volatile memory?

c) Differentiate between Cache Hit and Catch Miss?

d) Distinguish between Multiplexer and Demultiplexer.

e) Distinguish between sequential and combinational circuit.

f) Construct the circuit diagrm of SR Latch?

g) Construct the block diagram of NOR gate?

h) Differentiate between PROM and EPROM.

i) Differentiate between Serial-In-Serial-Out (SISO) and Parallel-In-Serial-Out (PISO) registers.

j) State two features of Counter.

Group-C

3. Answer any 8

a) State the key features of Cache Memory

b) What do you mean by Race arouond condition in J-K flip flop.

c) Diffeeentiate between Flip Flop and Registers.

d) Construct the circuit diagram of SR Latch.

e) Differentiate between DRAM and SRAM.

f) Can we use half adders for adding $(0011)_2$ and $(0001)_2$?

g) Construct the truth table of any one Universal Gate?

h) State Idempotent Law of Boolean algebra.

i) What is the octal equivalent of binary number 10101?

j) Differentiate between Page Fault and Page Hit?

Group-D

Answer All :

4.a) What are the different types of Logic Gates? State the functionality of each one with its block diagram and truth table.

OR

b) Minimize the following Boolean function-

$$F(A,B,C,D) = \sum m(0,1,3,4,8,9,10,13,15)$$

5.a) Differentiate between half adder and full adders. Construct the circuit diagram and truth table of full adders. Also state the simplified Boolean expression for full adder.

OR

b) State and explain the steps of Booth Algorithm to multiply the following positive numbers assuming n=4(4) x(5).

6.a) What are the different types of Flip Flop? Explain each one with its circuit diagram, truth table and characteristics equation.

OR

b) What are the different types of Shift Register? Explain each one in brief with its block diagram.

7.(a) What are the different types of Memory? Explain each one in brief.

OR

b) What are the different types of Read Only Memory ? Explain each one in brief.

***

2022

Full Marks - 60

Time - As in the Programme

The figure in the right hand margin indicate marks

Answer All question.

1. Answer all the questions :

a) A simple memory unit is known as_____.

b) Inputs to the shift registers can be serial or _____

c) The decimal equivalent of hex number IA53 is _____

d) What is EPROM?

e) Multiplexers are known as_____.

f) The number of control lines for 8 to 1 multiplexer is _____.

g) When both the inputs to an NOR gate are low, the output will be_____.

h) What is BCD?

2. Answer any Eight of the following questions.

i) What is PAL?

ii) What is guard bit?

iii) Define tri-state buffer.

iv) Convert $(0.345)_{10}$ into an octal number.

v) What is semiconductor?

vi) Design flip-flop circuit with NAND gate.

vii) Define Counters.

viii) What are Latches?

ix) What is the 2's compliment of the number 1101101?

x) What is IEEE standard for flating point numbers?

3. Write short notes. (Answer any Eight)

a) When simplified with Boolean algebra (x+y) (x+y) simplifies to _____.

b) What is Multiplexer?

c) What is Encoder?

d) What is a logic gate?

e) What is need of secondary storage? Give few examples of secondary storage.

f) What is Multiplexer?

g) Draw k-map for 3-variables.

h) Convert a $(450.12)_8$ hexadecimal

i) What is edge triggering?

j) State the De-Morgan's theorem?

4. Answer any Four of the following questions

a) Explain the various Boolean laws with examples

OR

Simplify the Boolean function

$f(A, B,C,D) = \sum (0,1,5,6,7,8,9,12,13)$ AS

i) Sum of products.

ii) Products of sums.

b) Write note on the full-adder with block diagram and truth table.

OR

Define carry-look ahead addition with suitable example.

c) Explain the JK-Flip-flops with a neat diagram.

OR

Difference between register and shift register.

d) List the various types of ROM in details.

OR

Write short notes (Answer any Two)

i) DRAMS

ii) Flash Memory

iii) Finite state machine model

***

2022

Full Marks - 60

Time - As in the Programme

The figure in the right hand margin indicate marks

Answer All question.

1. Answer all the questions :

a) To convert BCD to seven segments_____device used.

b) Decimal number 65 is equal to binary number _____

c) Convert $(246)_8$ in to hexadecimal form.

d) What is flash memoryh?

e) What is universal gate?

f) The inverter is _____

g) OR gate and _____ will form the NOR gate.

h) 2's complement of binary number 0101 is _____

2. Answer any Eight of the following questions.

a) Define NOR gate.

b) What is IEEE?

c) State the Associative Law.

d) What is Semiconductor?

e) Write the 2's compliment of the number 11101110.

f) Convert $(0.435)_{10}$ into a binary number.

g) What are latches?

h) What is Pal?

i) Convert the hexadecimal number (IA92) to binary.

j) What is tri-state buffer?

3. Write short notes:

a) Explain Demultiplexer

b) Define Counters.

c) What is Decoder?

d) Convert (369-25) in to a Octal number.

e) What is DRAMS?

f) Draw K-map for 4-variables.

g) Write the truth table for AND gate.

h) Write two features of Optical Disk.

i) Convert the binary number $(110000001111100)_2$ to hexadecimal number.

j) What is flash memory?

4. Answer any Four of the following questions

a) Explain the various number system with example

OR

Simplify the Boolean function F (A,B,C,D) = (0,1,4,6,8,10,12,14,15) as

i) Sum of products

ii) Products of Sum

b) Write note on the half-odder with block diagram and truth table.

OR

Explain Booth multiplication algorithm with suitable example.

c) Explain the S-R Flip-Flops with a neat diagram.

OR

Difference between counter and register.

d) List the various types of Ram in details.

OR

Write short notes on (Answer any Two) :

i) Hard Disks

ii) Semi-conductor

iii) EEPROM

***

2021

Full Marks - 60

Time - As in the Programme

The figure in the right hand margin indicate marks

Answer All question.

Group-A

1. Answer all

a) Can we use half adders for adding (0011)2 and (0001)2?

b) What do you mean by Mod-n Counter?

c) What is Unsinged Binary Division?

d) $(100001001)_2$ = ($)_{10}$

e) What is the full form of IEEE?

f) $(1100000111000001001)_2$ = ($)_{16}$

g) $(100000101101)_2$ = ($)_8$

h) What are the basic logic gates?

Group-B

1. Answer Any 8

a) What are Disk Performance parameters?

b) Why RAM is called as a volatile memory?

c) Differentiate between DRAM and SRM/

d) Distinguish between Multiplexer and Demultiplexer.

e) Distringuish between binary code and Gray Code.

f) What is the functionality of Semiconductor Memory?

g) What do you meanby Guard Bit?

h) Differentiate between PROM and EPROM

i) Write the functionality of Fast Adder.

j) State two features of Counter.

Group-C

1. Answer Any 8

a) $(1111100000101101)_2$ = ($)_8$

b) $(1001100000101101)_2$ = ($)_{10}$

c) F (P,Q,R,S) = oM (1,2,3,4,5,11,12,13,14,15)

d) $(1100000111000001001)_2$=($)_{16}$

e) Subtract (-1) from (-4) inbinary.

f) Write the truth table for AND

g) What ti Tautology?

h) Design an 8x1 Multiplexer using 4x1 Multiplexer.

i) Add ($0.473x10^5$) and ($0.55 x 10^2$) by using floating -pointarithmetic.

j) Differentiate between Serial-In-Serial-Out (SISO) and Parallel-In-Serial-Out (PISO) registers.

k) Write two features of Optical Disk

Group-D

Answer all

1.a) Write the simplified SOP (Sum of Product) form of the boolean expression (P+Q'+R'). (P+Q'+R). (P+Q+R')

OR

b) Write the application of Karnaugh Mapswith suitable example.

2.a) Find the decimal equivalent in IEEE 754 single format that is close to the given floating-point binary number : 01000011111110000000000000000000

b) Subtract $(-1)_{10}$ from $(-4)_{10}$ inbinary. Distinghish between Sing Magnitude and 2's Complement REpresentation.

3.a) What are the different types of Flip Flop? Explain each one in brief with suitable example.

OR

b) Write short notes on : Programmable Logic Devices (PLDs).

4.a) What are the different types of Read Only Memories ? Explain each one in brief.

OR

b) Differentiate between Asynchronous DRAMS and Synchronous DRAMS

***

2021

Full Marks - 60

Time - As in the Programme

The figure in the right hand margin indicate marks

Answer All question.

1. Answer all the following questions that carry 1 marks each.

a) What is ring counter?

b) Convert $(234)_{10} = (\ )_2$

c) What is the use of Guard bits?

d) Which gate is known as coincidence detector?

e) Write the use of controlled invertor.

f) Write the use of register file.

g) What is transmission gate?

h) What do you mean by min-term and max-term?

2. Answer any Eight the following questions that carry 1.5 marks each.

a) What is tri-state buffer?

b) What is edge-triggered flip-flop?

c) What is the use of booth algorithm?

d) How truncation generated in floating point numbers?

e) Write the differences between mealy and Moore state machine.

f) Prove the pair of expression for equivalence $(x \vee y)' \equiv x'y'$

g) Write an example of 2-to-1 mux.

h) Show that the NAND gate is univeral.

i) How to execute a full subtractor from a full adder?

j) Write the difference between latch and flip-flop.

3. Answer any Eight the following questions that carry 2 marks each

a) Difference between SRAM and DRAM.

b) What is the use of bidirectional shift register?

c) Find the decimal equivalent of the 2's complement number $(10110101)_2$

d) Show the representation of the decimal number 12.125 in the ANSI/IEEE short and long format.

e) Define binary half-adder.

f) Explain carry save addition with example.

g) Define Field Programmable Gate Array.

h) What are the advantages of ROM?

i) What is need of UP/DOWN counters?

j) Find the decimal equivalent of the unsigned binary number $(1101.0101)_2$

4. Answer all the following questions that carry 6 marks each

i) Minimize the following Boolean expression using Boolean law.

a) $AB + \overline{AC} + \overline{ABC}\,(AB + C)$

b) $\bar{x}\bar{y}\bar{z} + \bar{x}y\bar{z} + X\bar{y}\bar{z} + xy\bar{z}$

Discuss the need of multiplexer ? Draw the logic diagram of 4 x 1 multiplxer.

ii) Define binary adder. Explain the truth table and circuit diagram of types of adder.

OR

Write short notes on (Answer any TWO)

a) Floating point operation

b) Carry lookhead addition

c) Minimization using Karnaugh maps'

iii) Discuss CPLD architecture and its applications.

OR

What is finite state Machine (FSM) ? Discuss types of FSM.

iv) Explain types of ROM and their advantages

OR

Discuss the need and types of secondary storage in computer system.

***

2020

Full Marks - 60

Time - As in the Programme

The figure in the right hand margin indicate marks

Answer All question.

1. Answer all the questions :

i) What is the simplified SOP (Sum of Product) form of the boolean expression

(P + Q'+R'), P+Q'+R). (P+Q+R')

ii) What is the minterm expansion of f (P,Q,R) = PQ+QR'+PR

iii) In what technology, the implementation of the register file is by using an array of memory locations.

iv) IN a three BUS architecutref, how many input and output ports are there?

v) For a 3 BUS architecture, is the below code correct for adding three numbers?

PCourt, R=B, Marin, READ, Inc PC

WMFC

MDRout, R=B, IRin

R4outa, R5outb,SelectA, ADD, R6in, End

vi) What is the main advantages of multiple bus organisation over a single bus?

vii) What is the minimum time delay between two successive memory read operations?

viii) VLSI stands for what?

ix) The cells in a row are connected to a common line called what?

x) Differentiate between arithmetic and logic instruction?

xi) Differentiate between ROM and PROM?

xii) What is Tri-state buffer?

2. Answer any Eight.

a) State the parameters using which the performance of a Hard Disk is measureed.

b) What is UP/DOWN counter?

c) Define the term Register.

d) State the functionalities of Optical Disk.

e) State two characteristic of Multipiler.

f) What is FPGA?

g) State two important characteristics of Multiplexer.

h) What role an I/O module plays while performing I/O.

i) State the characteristics of Flash Memory.

j) What ids the octal representation of binary number 1111100101

3. Answer anyh Eight

a) Simplify SOP (sum of product) form of the boolean expression

(P+Q'+R'), (P+Q'+R), (P+Q+R')

b) Explain the concept of K-Map.

c) State the functionalities of any two logic gates.

d) Discuss some characterstic of DRAM.

e) What is PLD? State the important characterisitics of PLD.

f) State the various approaches used for performing I/O. What role an I/O module plays while performing I/O.

g) What steps a processor takes, when a interrupt occurs.

h) State the characteristics of CPLD.

i) State the architecture of digital computer.

j) Explain the functions of a processor.

4. Answer all

a) i) Explain the concept of K-Map.

OR

ii) State the functionalities of different types of logic gates.

b) i) Discuss some characteristic of Flating point number system

OR

ii) Write the steps of Booth Algorithm

c) i) What is PLD? State in important characteristics of PLD.

OR

ii) State the types of flip used in a processor.

d) i) Give a brief classification of ROM.

ii) Write down the major feature of DRAM.

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2023

Full Marks - 60

Time - As in the Programme

The figure in the right hand margin indicates marks.

Answer All questions

1. Answer all the questions. [1 × 8 = 8

(a) OR gate and _____ will form the NOR gate.

(b) $(11111000001111)_2 = (\_\_\_\_\_)_{16}$.

(c) What do you mean by latch ?

(d) What is EEPROM ?

(e) Multiplexers are known as _____.

(f) $(10001100)_2 = (\_\_\_\_\_)_{10}$

(g) What is flash memory ?

(h) What is BCD?

2. Answer any eight of the following questions. [1.5 × 8=12

(a) Convert $(0.565)_{10}$ into an octal number.

(b) What is semiconductor ?

(c) Which of the memory is volatile memory ?

(d) Define counters.

(e) What are latches ?

(f) What is T flip flop ?

(g) What is the 2's compliment of the number 11100110 ?

[P.T.O.

(h) State two features of Counter ?

(i) State the key features of Cache Memory.

(j) Define tri-state buffer.

3. Write short notes. [2 × 8=16

(a) Different between PROM and EPROM.

(b) What is De multiplexer ?

(c) What is encoder ?

(d) Explain D- Flip-Flop ?

(e) Explain ROM and its types.

(f) What is multiplexer ?

(g) Draw k-map for 2-variables.

(h) Convert a $(474.12)_8$ to hexadecimal.

(i) What is Number system ?

(j) State the Associative law.

4. Answer the following questions. [6 × 4=24

(a) Explain the various Types of number system with example.

OR

Simplify the Boolean function
f(A,B,C,D)=”(0,1,5,6,7,8,9,11,12,13,14) as

(a) Sum of products

(b) Products of sums.

(b) Write note on the half-adder with block diagram and truth table.

OR

Explain Booth multiplication algorithm (-6*3).

[Cont...

(c) Explain the SR-Flip-flops with a neat diagram.

OR

Difference between Encoder and Decoder.

(d) What are the different types of Read Only Memory ? Explain each one in brief.

OR

Short note :

(a) Semi-conductor

(b) EPROM

(c) DRAMS