

## Financial Accounting

QP Code : 17769

(3 Hours)

[Total Marks : 80]

- N.B. : (1) Question No. 1 is compulsory.  
 (2) Attempt any **four** questions out of the **remaining**.  
 (3) Answer to the questions should be **grouped** and written together.  
 (4) Figures to the **right** indicate **full** marks assigned to the question.

1. (a) Explain cash flow statement in detail. 10  
 (b) From the following Trial Balance of M/s Nishant Prepare Trading, Profit & Loss Account and Balance sheet as on 31-12-2011. 10

Particulars	Debit ₹	Particulars	Credit ₹
Opening Stock	30,000	Creditors	4,600
Plant	10,000	Return outward	350
Cash in hand	3,500	Bills payable	4,200
Carriage	500	Sales	1,59,100
Wages	1,500	Capital	40,000
Bills Receivable	1,500	Bad debt Reserve	500
Debtors	9,000		
Purchases	1,35,000		
Return inward	550		
Furniture	2,000		
Advertising	7,000		
Salaries	4,000		
General Expenses	1,200		
Drawings	3,000		
<b>Total</b>	<b>2,08,750</b>	<b>Total</b>	<b>2,08,750</b>

## Adjustments :

- (i) Write off depreciation on plant @ 10%.  
 (ii) Write off ₹ 1,000 as bad debt and create a provision for doubtful debt @ 5% on debtors.  
 (iii) Salaries outstanding ₹ 300.  
 (iv) Prepaid wages 500  
 (v) Closing stock ₹ 42,000.

[TURN OVER]

2. (a) Journalise the following transactions in the books of Shivprakash. 10

January, 2011

- 1 Started business with cash ₹ 60,000.  
 4 Opened an account in a bank ₹ 20,000.  
 9 Purchased goods ₹ 9,800.  
 13 Sold goods ₹ 9,100.  
 19 Purchased goods from Sudha ₹ 15,000.  
 25 Sold Goods to Saraswati ₹ 10,900.  
 26 Returned goods to sudha ₹ 1,200.  
 28 Goods returned from sarswati ₹ 3,000.  
 29 Telephone charges paid ₹ 2,000.  
 30 Goods distributed as free samples 1,000.

- (b) Explain objectives and functions of Trial Balance. 5

3. (a) Explain Accounting process in detail. 10

- (b) write note on Generally Accepted Accounting principles. 5

4. (a) Prepare three Column Cash Book of Mr. Ishwar from the following transactions with cash, bank and discount columns. 10

January, 2013

- 1 Cash in hand ₹ 50,000.  
 Bank Overdraft ₹ 15,000.  
 3 Paid into bank ₹ 25,000.  
 5 Ramesh settled his account for ₹ 3,750 by giving a cheque for ₹ 3690.  
 8 Cheque received from Ramesh sent to bank for collection.  
 10 Cash withdrawn from bank ₹ 8,000.  
 14 Ramesh's cheque returned dishonoured.  
 15 Received from Ramesh a currency note for ₹ 1,000 and gave him a change for it.  
 18 Paid Rent ₹ 500.  
 20 Bank charges as per pass book ₹ 150.  
 30 Deposited into Bank all cash in excess of ₹ 5,000.

- (b) Why Journal is called as book of prime Entry. 5

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5. (a) Calculate following ratios :—

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- (i) Gross Profit Ratio
- (ii) Net Profit Ratio
- (iii) Current Ratio
- (iv) Liquid Ratio

Particulars	₹	Particulars	₹
Sales	25,00,000	Fixed Assets	14,40,000
Cost of Sale	20,00,000	Net worth	15,00,000
Net Profit	4,00,000	Long term debt	9,00,000
Inventory	8,00,000	Current Liabilities	5,00,000
Other current Assets	7,00,000	Net profit before tax and interest	8,00,000

(b) What is importance of Ledger.

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6. (a)

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Month	Sales	Purchases	Wages	Expenses
January	6,00,000	4,00,000	10,000	5,000
February	5,00,000	3,00,000	8,000	5,000
March	5,50,000	3,50,000	15,000	5,000
April	3,50,000	2,00,000	12,000	5,000
May	2,00,000	1,00,000	8,000	5,000

**Other Information :**

- (i) Opening Cash Balance ₹ 40,000.
- (ii) Cash from debtors will be received by time lag of one month. All sales are on credit basis.
- (iii) Suppliers are paid by time lag of one month.
- (iv) For wages and expenses payment is made in the same month in which they incurred.
- (v) Prepare cash budget for three month February to April.

(b) Explain the concept of Trade Discount and Cash Discount.

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7. (a) Explain advantages and disadvantages of Ratio Analysis.

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(b) Explain Accounting standards.

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MCA Sem. II CBGS  
Data Structure

01/12/14

QP Code :17757

(3 Hours)

[Total Marks : 80]

N.B. : (1) Q1. is compulsory

(2) Attempt any 4 questions out of remaining six questions

No change

- Q1 a) Write a recursive algorithm to search an elements of an array in ascending order using Binary search. (10)  
Discuss the efficiency of Binary search in term of Big O notation.
- b) Define the structure of single Link List. Write an algorithm to: 10
- (I) traverse Doubly link list in Reverse Order
  - (II) Remove an element from the queue.
- Q2 a) Explain AVL Tree. Construct AVL tree for the following data values: (08)  
34, 54, 65, 18, 17, 19, 20, 32, 11, 12, 15, 21, 29
- b) What is M-Way Tree? Construct a B-Tree of order 4 for the following data values. (07)  
16, 22, 41, 18, 2, 51, 1, 14, 19, 28, 22, 29, 25, 31
- Q3 a) Write an algorithm to traverse the graph using (08)  
(I) DFS Traversal  
(II) BFS Traversal
- b) What is Heap? Construct heap tree and apply heap sort for the following values. (07)  
40 20 50 10 90 25 35 17 15
- Q4 a) Using the Modulo division method and linear probing, store the keys shown below in array of 19 elements. How many collisions occurred? What is the density of the list after all the keys have been inserted? (08)  
247456, 114562, 141145, 514576, 762145, 122267, 177645, 238534, 166728, 194126
- b) Explain Warshell Algorithm with the help of suitable example. (07)
- Q5 a) Define Almost Complete binary Tree. Write a recursive algorithm to traverse Binary tree in: (8)  
(I) Post order Traversal  
(II) Inorder Traversal
- b) What is Expression Tree? Construct Expression Tree for the following expression: (07)  
 $(A + B * C / D) - (E - F * K / I + L) * (P + Q)$

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- Q6 a) Differentiate between: (08)  
(I) B Tree Vs B\* Tree  
(II) Big O Vs Omega Notation
- b) Sort the following elements using shell sort (Show the steps) (07)  
49 , 6 , 46, 82, 9, 55, 4, 90, 12, 2  
Discuss the efficiency of shell sort in terms of bog O notation.
- Q7 Define the following term: 15
- (a) Complete Binary Tree  
(b) Application of stack  
(c) Doubly ended queue
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OS

QP Code : 17760

(3 Hours)

[Total Marks : 80

- N.B. :** (1) Question No. 1 is **compulsory**.  
(2) Attempt any **four** questions from the remaining **six** questions.  
(3) Answers to **sub-questions** should be answered **together**.  
(4) Illustrate answers with **diagrams** wherever **necessary**.

1. (a) What are external and internal fragmentations ? Discuss the techniques to overcome fragmentations. 8
- (b) For the processes listed in the table, draw a Gantt chart & find their average waiting time and average turnaround time using :— 12
- (i) FCFS
  - (ii) Shortest job first (both preemptive & non preemptive)
  - (iii) Round Robin( quantum = 2)

Process	Arrival Time	Processing Time
A	0	5
B	1	3
C	1	4
D	2	2

2. (a) What do you mean by concurrency control ? What are counting semaphore and binary semaphores ? 7
- (b) Given the disk has 100 (0 - 99) cylinders. Suppose the disk queue contains the request for I/O to blocks on the cylinder in following order :— 8
- 62, 34, 23, 78, 45, 50
- The head of the disk drive is currently at cylinder 21, previous request served was 30. What is the total head movement for the following algorithm ?
- (i) SSTF (ii) SCAN (iii) CSCAN (iv) LOOK.

3. (a) What are different types of threads ? Why threads are called a light weight process ? 8
- (b) Discuss the different File Access Methods. Explain the mechanisms of free space management. 7

4. (a) Consider a system with a following current resource allocation State :— 8

Process	Allocation			Max			Available		
	R1	R2	R3	R1	R2	R3	R1	R2	R3
P0	0	1	0	7	5	3	3	3	2
P1	2	0	0	3	2	2			
P2	3	0	2	9	0	2			
P3	2	1	1	2	2	2			
P4	0	0	2	4	3	3			

Using Banker's Algorithm.

- (i) What is the content of matrix need ?
- (ii) Is the system in safe state ? Give the sequence. .
- (iii) Is the request from P2 arrives for (1, 0, 2), can the request be granted immediately ?
- (b) What are the necessary conditions for deadlock to occur ? Explain various method of preventing deadlock. 7
5. (a) Consider the pages are referenced in the following sequence. 8  
2, 3, 3, 1, 5, 2, 4, 5, 3, 2, 5, 2, 3  
How many page faults will occur for the following page replacement algorithm, assuming three frames ?  
(i) LRU replacement (ii) FIFO replacement (iii) Optimal replacement.
- (b) Explain the concept of paging ? In a simple paging system with  $2^{24}$  bytes of physical memory, 256 pages of logical address space and page size of  $2^{10}$  bytes, how many bits are in logical address ? 7
6. (a) What are the criteria for CPU scheduling ? Explain the process Context Switching. 8
- (b) Explain the concept of Spooling and explain how it is different from buffering ? 7
7. Write short notes on : (Any three) 15
- (a) Compiler and Assembler.
- (b) Multitasking, Multiprogramming and Multiprocessing.
- (c) Clock hardware and software.
- (d) Access list and matrix.
- (e) Android OS.

QP Code : 17762

(3 Hours)

[Total Marks : 80

- N.B. :** (1) Question No.1 is **compulsory**.  
 (2) Solve any **four** from Question Nos. 2 to 7.  
 (3) **Figures** to the **right** indicate marks.

1. (a) Distinguish between any **two** :— 10
  - (i) CSMA and CSMA/CD
  - (ii) RIP and OSPF
  - (iii) ARP and DHCP.
- (b) Why do routers need Queuing algorithm ? Explain M/M/1 model ? 10
2. (a) What is traffic shaping ? What are the techniques used for traffic shaping ? Explain any one technique in brief ? 8
- (b) Explain in brief Multi Protocol Label Switching (MPLS). 7
3. (a) What is congestion ? Explain Congestion control in TCP. 8
- (b) Explain Three way Handshaking for TCP Connection establishment 7
4. (a) Explain Collision free Protocol one bit map and Binary countdown in detail ? 7
- (b) An ISP is granted a block of addresses starting with 190.100.0.0/16. The ISP needs to distribute these addresses to three groups of customers as follows :— 8
  - (i) The first group has 64 customers; each needs 256 addresses.
  - (ii) The second group has 128 customers; each needs 128 addresses.
  - (iii) The third group has 128 customers; each needs 64 addresses.

Find the Subnet address and Broadcast address of each block ? Design the sub blocks and find out how many addresses are still available after these allocations.
5. (a) Define Optimality Principle ? Explain Link State Routing algorithm in detail ? 8
- (b) What is inter Domain Routing ? Explain BGP routing Protocol in detail. 7
6. (a) PPP Protocol works at which layer in OSI model ? Explain PPP protocol in detail ? 8
- (b) Explain the concept on NAT in detail ? Why is NAT required ? 7
7. Write short note on (any **three**) :— 15
  - (a) Broadcast Routing protocol
  - (b) HTTP
  - (c) DNS
  - (d) SMTP.



QP Code :17765

(3 Hours)

[ Total Marks : 80

- N.B. :** (1) Question No.1 is **compulsory** and carries **20** marks.  
 (2) Attempt any **four** out of remaining **six** questions.  
 (3) Assume any **necessary** data but justify the same.  
 (4) **Figures** to the **right** indicate marks.  
 (5) Use of **calculators** is **allowed**.

1. (a) Ten competitors in a beauty contest are ranked by three judges in the following order. **10**

Judge 1	1	5	4	8	9	6	10	7	3	2
Judge 2	4	8	7	6	5	9	10	3	2	1
Judge 3	6	7	8	1	5	10	9	2	3	4

Use rank correlation coefficient to discuss which pair of judges has the nearest approach to beauty.

- (b) Prove that mean median and mode of the normal distribution coincide. **10**

2. (a) Define the Beta distribution of 1st kind and find its mean and variance. **3**  
 (b) Find Karl Pearson's coefficient of skewness for the following frequency distribution. **7**

Marks less than	10	20	30	40	50
No. of Students	5	12	32	44	50

3. (a) The Joint p.d.f. of two dimensional random variable  $(x, y)$  is given by - **8**  
 $f(x, y) = 2, 0 < x < 1, 0 < y < x$   
 $= 0.$  elsewhere

- (i) Find the marginal density function of  $x$  and  $y$ .  
 (ii) Find the conditional density function of  $y$  given  $x = x$  and the conditional density function of  $x$ , given  $y = y$ .  
 (iii) Check for independence of  $x$  and  $y$ .

- (b) From the following data obtain the two regression equations. 7

Marks In Economics	25	28	35	32	31	36	29	38	34	32
Marks in Statistics	43	46	49	41	36	32	31	30	33	39

4. (a) A bag contains 8 red and 5 white balls. Two successive drawings of 3 balls are made such that. 7  
 Case - I Balls are replaced before the second trial.  
 Case - II Balls are not replaced before the second trial.

Find the probability that the first drawing will give 3 white balls and 2nd drawing will give 3 red balls for case I and case II.

- (b) Prove that exponential distribution is memory less. 4  
 (c) Find the quartile deviation for the following data. 4

Class Interval	0 - 15	15 - 30	30 - 45	45 - 60	60 - 75	75 - 90	90 - 105
Frequency	8	26	30	45	20	17	4

5. (a) A die is rolled 100 times with the following distribution. 7

No.	1	2	3	4	5	6
Observed Frequency	17	14	20	17	17	15

at 0.01 level of significance determine whether the die is true (or uniform)

$$\chi^2(0.01) = 15.086.$$

- (b) If the mean of the following frequency distribution is 4.876 find k. 4

x	3.2	5.8	7.9	4.5
frequency	k	k+2	k - 3	k + 6

- (c) State and prove Bayes Theorem. 4

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6. (a) A random variable  $x$  is defined as the sum of faces when a pair of dice is thrown 7  
find the probability distribution of  $x$  and

- (i) Expected value of  $x$
- (ii) Probability that the sum is less than 4
- (iii) Probability  $6 < x < 10$

(b) Fit a poisson distribution to the following data and calculate the theoretical 8  
frequencies.

$x$	0	1	2	3	4
$f$	123	59	14	3	1

7. (a) The mean and variance of a binomial distribution are 3 and 2 respectively. Find 8  
the probability that the variate takes the values.

- (i) are less than or equal to 2
- (ii) greater than or equal to 7

(b) Find median and mode for the following distribution. 7

Age	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60
No.of Persons	50	70	80	180	150	120	70	50

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