MAS-103

Roll No. | | | | | | | | 2 | 8 |

M.B.A. I/ M.C.A. I
ODD SEMESTER
MAJOR EXAMINATION 2017 - 2018

Communication for Business and Management

Time: 3 Hrs. **Max. Marks: 50**

Note: Attempt all questions. Each question carries equal marks.

1. Attempt any four parts of the following: **(4× 2.5 = 10)**

(a) Communication is a two way process. Explain
(b) How is language one of the very effective tools of communication? Discuss
(c) Discuss clarity and consistency in communication.
(d) What are the features of a good writing? Cite examples
(e) How is listening different from hearing? Describe in brief
(f) What is reading comprehension? Suggest measures to improve the reading skill.

2. Attempt any two parts of the following: **(2× 5 = 10)**

(a) What is a business report? What are the essential components of a report? List them

(b) You have been asked to prepare a report on the impact of GST on Indian Economy. Write a report and submit it to the Ministry of Finance, Govt. of India. Invent the necessary details.

(c) What is a business proposal? How it is different from a business report? Write a proposal on a topic of your choice by inventing the necessary details.

3. Attempt any two parts of the following: **(2× 5 = 10)**

(a) Explain with examples the different parts of a business letter.

(b) Provide an example of a sample of letter of enquiry for an item or a number of items you wish to buy from a shop or a company. Invent the necessary details.

(c) You have seen in a leading newspaper that many vacancies of Asst. Managers are to be filled in a highly reputed company. Prepare and send your resume, with a cover letter mentioning your application for this job. Invent the required details.

4. Attempt any two parts of the following: **(2× 5 = 10)**

(a) What is personality development? How can soft skill help develop one's personality? Explain

(b) After qualifying the written examination you have been asked to appear for the interview. What factors you'll bear in mind to face the selection board? Write some features of interview skills

(c) The body language plays a significant role during speech delivery. Write a note on the parts of body language.

5. Attempt any two parts of the following: **(2× 5 = 10)**

(a) Eye contact, gesture and posture play instrumental role during speech delivery. Describe.

(b) What is Presentation? Describe in brief the points to be taken care of while delivering oral presentation?

(c) What are the visual aids in giving your talks in a conference/seminar? What factors you will keep in mind while showing visuals to the audience? Illustrate

MAS-108

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MCA/MBA
(SEM I / III) ODD SEMESTER
MAJOR EXAMINATION 2017-2018

Behavioral Psychology

Time: 3 Hrs. **Max. Marks: 50**

Note: Attempt all questions. Each question carry equal marks.

1. Attempt any four parts of the following: **(4 x 2.5= 10)**

(a) Define Motion study and explain the process of conducting it, its advantages, and disadvantages.
(b) What were the major understandings about human behavior at workplace gained by the Hawthorne Research Group that led to the emergence of Human Relations School?
(c) Define Motivation and explain its elements. What are the various categories of theories of motivation?
(d) Critically evaluate the Charismatic leadership theory.
(e) Define group and explain its various types.
(f) What are the potential sources of stress? Describe.

2. Attempt any two parts of the following: **(2 x 5= 10)**

(a) What are the various methods of classifying psychological tests?
(b) Define fatigue, explain its symptoms and effects. What possible measures could be taken to address the problem of fatigue at workplace?
(c) Explain the parameters that determine the authenticity of a psychological test.

3. Attempt any two parts of the following: **(2 x 5= 10)**

(a) Define recruitment and explain its objectives and sources. How to conduct recruitment process? Explain.
(b) Define industrial accidents and explain its causes.
(c) Explain what do you understand by job analysis? Also, explain the purpose/importance of conducting it.

4. Attempt any two parts of the following: **(2 x 5= 10)**

(a) Explain, in detail, what is performance appraisal and its objectives. Explain the 360° appraisal process and how it is different from traditional approaches?
(b) How would you evaluate the performance of an employee using absolute methods?
(c) Provide the definition of training, explain its purpose and steps involved in the process of training.

5. Attempt any two parts of the following: **(2 x 5= 10)**

(a) Define development and explain its objectives. How development and training differ?
(b) What are the various methods of training employees in an organization?
(c) What are the possible ways to ensure that training programme designed by you is effective?

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Printed Pages: 2

Roll No. | | | | | | | | | 2 | 8 |

Paper Code: - MBA-102

MCA

First Year / Semester - I
Major Examination: 2017-18

ACCOUNTING AND FINANACIAL ANALYSIS

Time: 3 Hrs

Max. Marks: 50

Note: Attempt all questions. Each question carries equal marks.

Question No. 1. Attempt any four parts of the following: **(2.5 x 4 = 10 Marks)**

(a) Explain Double Entry System. State its advantages.

(b) Accounting concepts are the logical notions or basic opinions which guide the accountants in understanding the fundamentals of the science and art of accounting." Elaborate the statement.

(c) What is Trial Balance? Discuss the objectives of Trial Balance.

(d) Give a specimen of Trading and Profit & Loss Account with imaginary figures.

(e) Discuss briefly the basic Accounting Concepts.

(f) From the following balances extracted from the books of X & Co., **prepare a Trading and Profit and Loss account** and **Balance Sheet** on 31st December, 1991.

	Rs		Rs.
Stock on 1st January	11,000	Returns outwards	500
Bills receivables	4,500	Trade expenses	200
Purchases	39,000	Office fixtures	1,000
Wages	2,800	Cash in hand	500
Insurance	700	Cash at bank	4,750
Sundry debtors	30,000	Tent and taxes	1,100
Carriage inwards	800	Carriage outwards	1,450
Commission (Dr.)	800	Sales	60,000
Interest on loan	700	Bills payable	3,000
Stationary	450	Creditors	19,650
Returns inwards	1,300	Capital	17,900

The stock on 31st December, 1991 was valued at Rs. 25,000.

Question No. 2Attempt any two parts of the following: **(5 x 2 = 10 Marks)**

(a) What is a Financial Statement? State its importance.

(b) What is Ratio Analysis? Explain its significance.

(c) What is Goodwill? Write short notes on methods of Valuation of Goodwill.

Question No. 3 Attempt any two parts of the following: **(5 x 2 = 10 Marks)**

(a) What is Liquidity? How do you calculate it?

(b) What are the categories under which the various ratios are grouped on the basis of objectives?

(c) Define inventories. What are the main objectives of inventory valuation?

Question No. 4 Attempt any two parts of the following: **(5 x 2 = 10 Marks)**

(a) The Current Assets of a company are Rs. 1, 26,000 and the Current Ratio is 3:2 and the Inventories are Rs. 2,000. Find out the liquid Ratio.

(b) During the year a company earned a profit of Rs. 2,75,000 before adjusting goodwill written off of Rs. 25,000 and after adjusting the following:

(i)	Depreciation of Plant	Rs. 15,000
(ii)	Discount allowed to Debtors	Rs. 1,200
(iii)	Loss on Sale of Investments	Rs. 8,000
(iv)	Proposed Dividend	Rs. 5,000
(v)	Transfer to General Reserves	Rs. 10,000
(vi)	Preliminary Expenses appeared at in the books. Out of this 25% has been written off.	Rs. 30,000

Work out Funds from Operation.

(c) Define the term 'Share'? Write the need of valuation of Shares.

Question No. 5Attempt any two parts of the following: **(5 x 2 = 10 Marks)**

(a) What are the contingent liabilities? Mention any two examples.

(b) What is Stock Turnover Ratio? How is it calculated?

(c) Define the term 'Forensic Accounting'. Write its importance in accounting.

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MCA-101

MCA, 1st Sem.

Major Examination 2017-18

Computer Programming with C

Marks: 50

Time: 3hrs

Note: Attempt all questions. Each question carries equal marks.

Q1. Attempt any 4 parts of the following. 2.5

(a) Write a program to rotate the values of the three floating point variables a, b and c (which are input by user) such that a has the value of b, b has the value of c and c has the value of a. 2.5

(b) Write a program to check an input number whether Armstrong or not. 2.5

(c) Write a program to print and count the Prime numbers from 1 to 100 2.5

(d) Write a program to print and count the leap years for the range of the years which is input by user 2.5

(e) Write a program in C to find output as per the conditions of the following table using nested switch. Take the inputs Number and Character from user for this implementation.

Number	Character	Output
1	R	RAM
	S	SEETA
2	R	RADHA
	S	SHYAM

2.5

(f) Write a program to find the sum of the following series-

$$x-x^2+x^3-x^4+x^5.....x^n$$

Take the inputs for x and n from user.

Q2. Attempt any 2 parts of the following.

(a) When using recursion is advantageous? Explain any application where using recursion looks advantageous? Also discuss the drawbacks of recursion? What are the various types of recursion? Write a program to print factorial of a number using recursion. 5

(b) Why we need a structure? What is its default mode? How a structure is different from an array? At how many places an array can be used with a structure? Make a structure 'Product' which should have the fields as Product code, Product name, Price of the product and Bar code on the product. Now using this structure write a program which can read and display 100 products in a shop. 5

(c) Define the types of function arguments with suitable example. Write a function to find length of a string using call by value method of function. Now using this function write a program to check a string whether palindrome or not. 5

Q3. Attempt any 2 parts of the following.

(a) What is the significance of a 3D array? Explain through an example. Discuss the applications of array. Write a program to display the addition results of the transposes of two matrices. User should provide the values of these two matrices through keyboard as input. 5

(b) When we need a pointer? Explain using appropriate example. What do you understand by dereferencing? Write the difference between various memory allocation functions. Write a program in C to swap two floating point numbers using passing pointers as the function argument method. 5

(c) Write the two programs using function as asked below - 5

(i) The function should accept an integer argument and return the sum of its digits.

(ii) The function should accept an integer argument and return the reverse of it.

Q4. Attempt any 2 parts of the following.

(a) What are the various operations which are performed on a file? Write two separate programs to copy the contents of a text file 'ABC.txt' to another text file 'XYZ.txt'. One program should use EOF and another program should use feof( ). 5

(b) Discuss the functions fseek( ), ftell( ) and rewind( ).Write a program in C to find the occurrence of the word 'This' in a text file "ABC.txt" and replace this word with the word 'These'. 5

(c) What is EOF? Write a program which reads a file ABC which contains various odd and even numbers. Now your program should write all odd numbers of ABC in a file ODD and all even numbers of ABC in a file EVEN. 5

Q5. Attempt any 2 parts of the following.

(a) What are preprocessor directives? Explain its various types in short using suitable examples. Also describe conditional compilation using suitable pseudo code. 5

(b) What are command line arguments? Suppose there is a file named CODE which can copy the contents of a file XYZ to another file ABC. How would you implement this task with command line arguments? 5

(c) What is a macro? How is it different from a function? Write down a macro which is used in file handling. Explain the different types of macro substitutions with appropriate examples. 5

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M.C.A. I
ODD SEMESTER
MAJOR EXAMINATION 2017 - 2018

Applied Probability & Statistics

Time: 3 Hrs. **Max. Marks: 50**

Note: Attempt all questions. Each questions carry equal marks.

1. Attempt any four parts of the following: **$(4\times 2.5 = 10)$**

(a) Find the Pearson's coefficient of skewness for the following data:

Class	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
Frequency	5	9	14	20	25	15	8	4

(b) Calculate the coefficient of the skewness from the following data:

Wages in Rupees	0-10	10-20	20-30	30-40	40-50	50-60	60-70
N0. Of labours	185	77	34	180	136	23	50

(c) Fit a straight line to the following data:

X	71	68	73	69	67	65	66	67
Y	69	72	70	70	68	67	68	64

(d) An urn contains 5 white and 5 black balls, 4 balls are drawn from this urn and put into another urn. From this second urn a ball is drawn and is found to be white. What is the probability of drawing a white ball again at the next draw (the first white ball drawn is not replaced).

(e) If the probability of hitting a target is 10% and 10 shots are fired independently, what is the probability that the target will be hit at least once?

(f) Assuming that the probability of a fatal accident in a factory during the year is 1/1200. Calculate the probability that in a factory employing 300 workers, there will be at least two fatal accidents in a year ($e^{-0.25} = 0.7788$).

2. Attempt any two parts of the following: **$(2\times 5 = 10)$**

(a) From the following data calculate the rank correlation coefficient after making adjustment for tied ranks.

X	48	33	40	9	16	16	65	24	16	57
Y	13	13	24	6	15	4	20	9	6	19

(b) Given the bivariate data:

X	1	5	3	2	1	1	7	3
Y	6	1	0	0	1	2	1	5

(i) Fit a regression line of Y on X and thence predict Y if X = 5
(ii) Fit a regression line of X on Y and thence predict Y if Y = 2.5.

(c) Find the correlation coefficient between the following pairs of values

X	100	110	115	116	120	122	125	130	135
Y	18	18	17	16	16	16	15	13	10

3. **Attempt any two parts of the following:** **(2× 5 = 10)**

(a) Given the following data:

X1	3	5	6	8	12	14
X2	16	10	7	4	3	2
X3	90	72	54	42	30	12

Compute the coefficient of linear multiple of X3 on X1 and X2.

(b) If $\sigma_1 = 3$, $\sigma_2 = 4$, $\sigma_3 = 5$, $r_{12} = 0.7$, $r_{23} = 0.4$, $r_{31} = 0.6$, then determine the regression equation of X_1 on X_2 and X_3.

(c) If X and Y are uncorrected random variables, find the coefficient of correlation between X+Y and X-Y.

4. **Attempt any two parts of the following:** **(2× 5 = 10)**

(a) An experiment was conducted on nine individuals. The experiment showed that due to smoking, the pulse rate increased in following order:

5, 3, 4, -1, 2, -3, 4, 3, 1

Can you maintain that smoking leads to an increase in the pulse rate?

(t for 8 d.f. at 5% level of significant = 2.31)

(b) To test the effectiveness of inoculation against cholera, the following table was obtained.

	Attached	Not attached	Total
Inoculated	30	160	190
Not Inoculated	140	460	600
Total	170	620	790

Here figures (digits) represent the number of persons. Use χ^2 – test to defend or refute the statement. The inoculation prevents attack from cholera. The value of χ^2 – for 1 degree of freedom at 5% level is 3.841.

(c) Find trend values from the following data by the 3-yearly moving average method.

Year	1982	1983	1984	1985	1986	1987	1988
Production	412	438	446	454	470	483	490

5. **Attempt any two parts of the following:** **(2× 5 = 10)**

(a) Construct $\overline{X}$ and R-chart for the data given below:

Sample No.	Measurements of items		
1	42	20	39
2	50	42	39
3	21	29	50
4	46	35	40
5	32	51	40
6	30	54	35
7	41	30	29
8	41	31	38

(b) The following set of data covering 15 consecutive production days on the number of defectives found in daily production from a sample of 200 units is given. Draw a *p – chart* and test whether the production process was in control.

Production day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
No. Of defectives	10	5	10	12	11	9	22	4	12	24	21	15	8	14	4

(c) The data below gives the number of blemishes on limitation glass of 22 samples. Construct a *C-chart* and comment on the production process. The number of blemishes per product are

6, 6, 6, 7, 7, 6, 6, 7, 8, 7, 6, 5, 7, 9, 9, 8, 8, 8, 9, 7, 8, 8.

MCA I (ODD SEMESTER)

THEORY EXAMINATION (2017-18)

DISCRETE MATHEMATICS

e = 3 Hours

Max. Marks = 50

: Attempt all questions.

1. Attempt any four parts: $(2.5 \times 4 = 10)$

a) If A, B and C are the sets, then prove the following:

(i) $A \times (B \cap C) = (A \times B) \cap (A \times C)$

(ii) $A - (B \cup C) = (A - B) \cap (A - C)$

b) Show that the mapping $f: R \to R$ defined by $f(x) = 6x + 7$ is one-one and onto, R being set of real numbers.

c) Find the range of function $f(x) = \frac{1}{2-\cos 3x}$. If $f: R \to R$ defined by $f(x) = x^2 + 2$, then find the value of $f^{-1}(11, 38)$.

d) Define group. Show that the set of cube roots of unity is an abelian group with respect to multiplication.

e) Let H be a subgroup of G and K is defined by $K = \{x \in G: xH = Hx\}$, then prove that K is subgroup of G.

f) Define integral domain and field. Prove that a finite integral domain is a field.

2. Attempt any two parts: $(5 \times 2 = 10)$

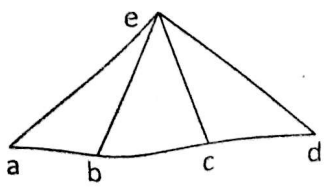
a) Define a planar graph. For a connected planar graph with m edges, v vertices and f regions, prove that $3f \leq 2m$ and $3v - m \geq 6$.

b) Define Hamiltonian circuit. Prove that a graph G with v vertices and e edges has a Hamiltonian circuit if $2e \geq v^2 - 3v + 6$.

c) Define binary tree. Prove that minimum height of a full binary tree is given by $h_{min} = [\log_2(n+1) - 1]$ and maximum height $h_{max} = \frac{n-1}{2}$.

3. Attempt any two parts: $(5 \times 2 = 10)$

a) Define Chromatic number and Chromatic polynomial. Find Chromatic polynomial for the following graph:



b) Prove that a full binary tree of height h has 2^h leaves and $2^{h+1} - 1$ vertices.

c) Write short notes on following:

(i) Simple graph and Multi graphs.

(ii) Ordered tree and full binary tree.

$(5 \times 2 = 10)$

4. Attempt any two parts:
   a) Define discrete numeric function and generating function. Find generating function for discrete numeric function, $a = (1,4,16,64, \ldots\ldots)$ and find discrete numeric function for generating function, $A(z) = \frac{1}{z^2-7z+12}$.
   b) Solve the recurrence relation $a_n - 7a_{n-1} + 10a_{n-2} = 0, n \geq 2$, given that $a_0 = 10,\ a_1 = 41$.
   c) Using the method of generating function, solve the following recurrence relation: $a_r - 2a_{r-1} + a_{r-2} = 2^r,\ r \geq 2$, given that $a_0 = 2,\ a_1 = 1$.

$(5 \times 2 = 10)$

5. Attempt any two parts:
   a) State and prove the Pigeonhole principle. If 6 colours are used to paint 49 cars then find at least how many cars will have the same colour.
   b) Solve the recurrence relation: $a_r - 6a_{r-1} + 9a_{r-2} = (r+1)3^r$, given that $a_0 = 2,\ a_1 = -6$.
   c) Solve the recurrence relation: $a_r - 2a_{r-1} + a_{r-2} = 6$, given that $a_0 = 2,\ a_1 = 8$.

MCA 103

Roll No.

MCA
ODD SEMESTER
Major Examination 2017 – 2018
Computer Organization & Architecture

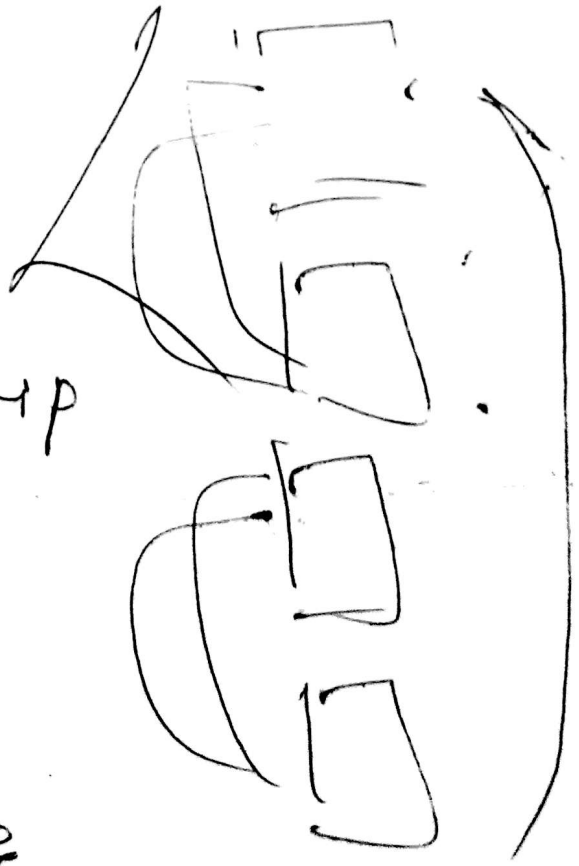
Time: 03 Hrs

Max. Marks: 50

Note: Attempt ALL questions. Each question carries equal Marks.

Q.1	Attempt any four parts of the following:		(4 * 2.5 = 10)
a	Find the value of x in the following:		
	(i) $(6450)_7 = (x)_{10}$	(ii) x = 11^{th} complement of $(879)_{12}$	
	(iii) $(343)_6 \times (523)_6 = (x)_6$	(iv) $x = (10101)_2 - (111101)_2$ subtract using 2's complement.	
	(v) $(8765)_9 \times (7856)_9 = (x)_9$		
b	Design an octal-to-binary priority encoder. Provide an output V to indicate that at least one of the inputs is a 1. The input with the lowest subscript number has the highest priority. What will be the value of four outputs if inputs D5 and D3 are 1 and the other inputs are all 0's?		
c	Simplify the following expression F together with the don't care conditions d in (I) sum-of-products form and (II) products-of-sums forms: $F(w,x,y,z) = \sum(2,4,10,12,14) + d(0,1,5,8)$		
d	Implement the following function using 8:1 and 4:1 multiplexer: $F(A,B,C,D) = \sum(1,2,3,5,7,8,9,10,13)$		
e	Implement the following four Boolean expressions with three half adders: D = A'B' C+ A'B C' + AB'C'+ ABC E = A'BC + A B'C F = AB C'+ (A'+ B')C G = ABC		
f	Design a synchronous counter which steers through the following states: S4-S2-S0-S5-S3 using J-K Flip flop.		
Q.2	Attempt any two parts of the following:		(2 * 5 = 10)
a	Design 4 bit carry look ahead generator.		
b	Design a BCD to decimal decoder using the unused combinations of the BCD code as don't care conditions.		
c	Design 4-bit Arithmetic Circuit that performs Addition, Subtraction, Increment and Decrement operations		
Q.3	Attempt any two parts of the following:		(2 * 5 = 10)
a	Write a program to evaluate the arithmetic statement:- X = (A+B*C/(D+E*F)*G) /(H*I) Using Three, Two, One and Zero address Machines.		
b	Show the basic organization of a CPU in terms of registers and other units for a Single-bus – organization. In such a CPU, show the complete action of the CPU in fetching and executing the instruction.		
c	(i)	Design a expanding opcode to allow all of the following to be encoded in a 16-bit instruction and 4-bit addresses : (i) 15 Instruction with three addresses. (ii) 14 Instruction with two addresses.	

		(iii) 30 Instruction with one addresses. (iv) 32 Instruction with zero addresses.
	(ii)	Draw a diagram of bus system for four registers of 4-bits each. The bus is to be constructed with multiplexers.
Q.4	Attempt any two parts of the following:	(2 * 5 = 10)
a	4K x 8 RAM chips are used to construct 64K x 32 Memory. How many chips will be required? Draw a connection diagram.	
b	What is cache memory? Explain different mapping techniques of Cache memory.	
c	Discuss the concept and implementation of virtual memory. Also describe a suitable scheme for translation from logical address to physical address.	
Q.5	Attempt any two parts of the following:	(2 * 5 = 10)
a	Describe DMA with suitable block diagram. Why does DMA have priority over the CPU when both request a memory transfer? Explain.	
b	A block set associative cache consists of a total of 128 blocks divided into eight block sets. The main memory containing 4096 blocks each consisting of 32 words. (i) How many bits are there in the main memory address? (ii) How many bits are there in each of TAG, SET and WORD field?	
c	Discuss the working principle of I/O processor (IOP). Illustrate the CPU-IOP communication with the help of flowchart.	



Sakshi

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

MCA I (ODD SEMESTER)

Minor Test

Discrete Mathematics

MAS – 106

Time: 2 Hrs. **Max. Marks: 30**

Note: Attempt all questions. Part (a) of each question is compulsory. Attempt any two parts out of remaining three parts in each question.

1. (a) Prove the following:

$$A - (B \cup C) = (A - B) \cap (A - C) \text{ and}$$

$A \times (B \cup C) = (A \times B) \cup (A \times C)$ (4)

(b) Let R be a relation on set of integers A, such that $R = \{(x, y): x \cong y(mod\ m)\}$, then prove that R is an equivalence relation. (3)

(c) Prove that the necessary and sufficient condition that a subset H of a group G is a subgroup of G if $\forall\ a, b \in H \Rightarrow ab^{-1} \in H$. (3)

(d) Define cyclic group. Show that $G = \{1, -1, i, -i\}$ is a cyclic group. Prove that every cyclic group is an abelian group. (3)

2. (a) If $R: A \to B$ and $S: B \to C$ be two relations, then prove that $(RoS)^{-1} = S^{-1}oR^{-1}$. (4)

(b) Show that $f: R \to R$ defined by $f(x) = 4x + 7$ is one-one and onto mapping. (3)

(c) If R is a relation on A defined by $x + y$ is divisible by 2, where $A = \{1,2,3,4,6\}$, then find R^{-1}. (3)

(d) If $A = \{1,2,3\}, B = \{p, q, r\}$ and $C = \{x, y, z\}$. $R = \{(1, p), (1, r), (2, q), (3, q)\}$ and $S = \{(p, y), (q, x), (r, z)\}$, then compute RoS. (3)

3. (a) Prove that $(Q, +)$ and $(\{-1, +1\}, \cdot)$ are both abelian groups. (4)

(b) Define order of an element in a group. If $(G, \cdot)$ be a group, then prove that $O(a) = O(a^{-1}),\ a \in G$. (3)

(c) Define Normal Subgroup. Prove that a subgroup H of a group G is normal iff $xHx^{-1} = H, \forall x \in G$. (3)

(d) If f is a homomorphism of a group G to group G' with kernel K, then prove that K is normal subgroup of G. (3)

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MCA (1st Sem)
ODD SEMESTER
Minor Test 2017-2018

Computer Organization and Architecture

Time: 02 Hrs

Max. Marks: 30

Q.1	Attempt any **Three parts** of the following Q. 1(c) is compulsory		
a	Find the value of x in the following:		
	(i)	$(653)_7 \times (523)_7 = (x)_7$	(ii) $(D6C.5B)_{16} = (x)_4$
	(iii)	$x = (11010)_2 - (1101)_2$ subtract using 2's complement.	(iv) $(21340)_5 = (x)_{10}$
b			
	(i)	Prove that $(A+B'+AB)(A+B')(A'B) = 0$.	
	(ii)	Implement the Boolean function $F = A'B'C + A'BC'+A'C'$ with NAND gate only.	
	(iii)	Reduce the following Boolean to required number of literals. $(w + y + z)(w + y + z')(w + y + z)(w + x')$ to four literals.	
c	Design a 4 bit carry look ahead generator with suitable diagram.		
d	(i)	Draw the logic diagram of a 2 to 4 line decoder with only NAND gates. Include an enable input	
	(ii)	A combinational circuit is defined by the following three functions: $F1 = x'y' + xyz'$ $F2 = x' + y$ $F3 = xy + x'y'$ Design the circuit with a decoder and external gates.	
Q.2	Attempt any **Three parts** of the following Q. 2(d) is compulsory		
a	Convert the decimal number 125.25 to base 3, base 4, base 6, base 7, base 8, base 9, base 11, base 16.		
b	Design a combinational circuit that accept a three bit number and generates an output binary number equal to the square of the input number.		
c	(i)	Implement a Full subtractor with two half subtractor and an OR gate.	
	(ii)	Minimize the given Boolean function using K- map and implement the simplified function using NAND gates only. $F(A,B,C,D) = \sum m(0,1,2,3,7,8,10) + d(5,6,11,15)$	
d	(i)	Obtain the simplified expression in (i) Sum of products (ii) Product of sums: $(A'+B'+D)(A'+D')(A+B+D')(A+B'+C+D)$	
	(ii)	Simplify the Boolean function F using the don't care condition d, in (i) sum of products (ii) product of sums: $F = w'(xy' + xy' + xyz) + x'z'(y + w)$ $d = w'x(y'z + yz') + wyz$	
Q.3	Attempt any **Three parts** of the following Q. 3(a) is compulsory		
a	Design a BCD to decimal decoder using the unused combinations of the BCD code as don't care conditions.		
b	(i)	Construct a 32x1 multiplexer with 4x1 multiplexers. Use block diagrams.	

	(ii)	Implement full adder with the help of (I) NAND gates (II) NOR gates.
c	(i)	Design a 4-line to 2-line priority encoder. Include an output E to indicate that at least one input is a 1.
	(ii)	Implement the following functions using a 4-to-16 line decoder $F(A,B,C,D) = \sum(1, 2, 4, 7, 8, 11, 12, 13)$
d	Implement the following functions with (I) 16:1 MUX (II) 8:1 MUX (III) 4:1 MUX :- $F(A,B,C,D) = \sum(0, 2, 3, 6, 8, 9, 11, 12, 14)$	

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MCA-101

Roll No	2	0	1	7	0	2	4	2	2		

MCA, 1st Sem.
Minor Test 2017-18
Computer Programming with C

Time: 2hrs ***Marks: 20***

Note: Attempt all questions.

Q1. Attempt any 3 parts of the following. Q1(a) is compulsory

(a) Write a C program to print the sum of the digits of any three digit number which is input by user (without using any loop). Now answer the following questions with reference to this program: **4**

i. What is the meaning of each token of the first line of your program?
ii. Can we declare the variables at any place in the code? Why?
iii. Which type of function is main( ) whether user defined or predefined?
iv. Why there is no effect to your output whether we write any return type with main( )?

(b) Explain following terms in short: **2**
Compiler, Interpreter, Assembler and Operating System

(c) Write a program in C to print factorial of an input number using decrementing loop. **2**

(d) Write a program in C to print following pattern: **2**

```
X
X   Y
X   Y   Z
```

Q2. Attempt any 2 parts of the following. Q2(a) is compulsory

(a) What is a token? Explain its types. **4**

How many tokens are there in following statement and to which category of the tokens they belong to:
C=A+10;

What are the rules for creating an identifier?

(b) Write a program which converts ASCII code of any character and vice versa. **2**
Do you face any problem while implementing this code? How this problem gets resolved (if any)?

(c) What is typecasting? What are the basic rules for type conversion? Differentiate between coercion and casting with appropriate examples. **2**

Q3. Attempt any 2 parts of the following. Q3(a) is compulsory

(a) What do you understand by nesting? What is the effect of Nesting on time complexity of the program? Write the small programs in C which show the concept of: **4**

i. Nested if
ii. Nested Switch
iii. Nested Loop

(b) Write a program in C to find largest of the three floating point numbers. Can this program be converted using switch statement? If yes the write down the code. If no then tell the reason. **2**

(c) Write down the outputs for following code fragments: **2**

i.
```
static int i=1;
printf("%d%d%d", i+1, i++, ++i);
```

ii.
```
if (12<11);
else x= (12<11) ? printf("Twelve") : printf("Eleven");
printf("%d",x);
```

iii.
```
if(printf("%d",printf("ABC")))
printf("\t C Programming");
```

iv.
```
int i;
for( i=2; i<20; i*=2);
printf("%d", i);
```

MAS-108

Roll No. | | | | | | | 46

Sapahi

MCA/MBA
ODD SEMESTER
MINOR TEST 2017-2018

Behavioral Psychology

Time: 2 Hrs. Max. Marks: 30

Note: Answer all questions

Q.1 Attempt any Three parts of the following. Q. 1(a) is compulsory.
(a) Explain what is Behavioral Psychology and what are its distinct features? 4
(b) Explain the objectives, process, and advantages of conducting a Time Study. 3
(c) Discuss Adam's Equity theory and Vroom's Expectancy theory of Motivation. 3
(d) Define Job Satisfaction and explain the ways to measure it. 3

Q.2 Attempt any Three parts of the following. Q. 2(a) is compulsory
(a) Explain Henry Mintzberg's theory of Managerial Roles. 4
(b) Explain the fundamental principles of Taylor's theory and its major criticisms. 3
(c) Describe various phases of experiments conducted under Hawthorne Series. 3
(d) Discuss the important insights gained by the Hawthorne Research Group. 3

Q.3 Attempt any Three parts of the following. Q. 3(a) is compulsory.
(a) Define stress and describe various ways of managing stress. 4
(b) Explain the factors that cause Job Satisfaction and outcomes of Job Satisfaction. 3
(c) Describe any two theories of Leadership which you have studied. 3
(d) Define groups and explain various ways of group influence on individual behavior 3

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Subject code-MAS 103

Roll no. | | | | | | | 2 | 8 |

MBA/MCA Ist YEAR

ODD SEMESTER

MINOR TEST 2017-18

Time- 2 hr.

Max. Marks-20

Note: Answer all questions:-

Q.1. Attempt any three parts of the following. Q.1 (a) is compulsory.

- Discuss various theories and models of Communication with accurate available charts and example. 4
- Synchronize the process of communication and elucidate the effect of various barriers on this process. 2
- What you mean by the skill of listening? Explain types of listening and the important steps involved in developing listening skill. 2
- Explain the terms 'speech' and 'writing' marking out the differential grounds. 2

Q.2. Attempt any two parts of the following. Q.1 (a) is compulsory.

- Discuss the patterns of communication in business organizations in detail with specific marking and example. 4
- What is cross-cultural communication? Discuss the importance of those specific skills in contemporary business world. 2
- What are 7 C'S of communication? Enumerate in detail. 2

Q.3. Attempt any two parts of the following. Q.1 (a) is compulsory.

- Elucidate reading skill and the sub-skills of reading? 4
- Expound the stages of writing by explaining the term 'mechanics of writing'. 2
- What is a paragraph? Explain three orders of paragraph development. 2