

1C7115

Roll No. _____

23/12/19

Total No of Pages: **3**

1C7115

MCA I - Sem. (Main/Back) Exam., Dec. 2019
MCA-105A Accounting and Financial Management

Time: 3 Hours

Maximum Marks: 80
Min. Passing Marks: 32

Instructions to Candidates:

Attempt all question. Marks of question are indicated against each question.

*Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)*

1. NIL

2. NIL

Q.1 Answer the following questions in 20 words each: [10×1=10]

- (a) What do you mean by Cost Accounting?
- (b) Draw a format of Journal.
- (c) What is a Purchase Book?
- (d) What is the use of a Ledger?
- (e) Name any one solvency ratio and its formula.
- (f) Mention any two characteristics of marginal costing.
- (g) Define Financial Management.
- (h) Name the divisions of final accounts.
- (i) What are bad debts?
- (j) What is BEP?

Q.2 Answer the following questions in **60** words:

[$5 \times 3 = 15$]

- (a) Explain the scope of Accounting.
- (b) What is trading account?
- (c) Explain any two turnover ratios.
- (d) What are the advantages of Cost Accounting?
- (e) "Financial Management is both science and art", explain.

Q.3 Answer each question in **120** word:

[$5 \times 4 = 20$]

- (a) Explain the difference between Financial Accounting and Management Accounting.
- (b) Define a Balance Sheet.
- (c) Explain the difference between Trading Account and P&L Account.
- (d) On the basis of Profit Margin which company among the following is better?

Particulars	X Ltd.	Y Ltd.
Profit Margin	20%	11%
Investment Turnover	2	4

- (e) Explain the wealth maximization objective of Financial Management.

Q.4 Write notes on any two of the following in about **250** words each:

[$2 \times 10 = 20$]

- (a) Explain the cost concept with classification.
- (b) To whom Accounting information is useful?
- (c) What are the functions of Financial Management?

5]

Q.5 A company's Trial Balance for six months ending 30th September 2018 is as follows:

	₹		₹
Drawing	30,780	Capital	1,80,000
Stock	1,15,200	Creator	23,400
Debtor	1,71,000	Sales	5,55,000
Purchases	1,87,200	Bank Overdraft	12,000
Wages	21,600		
Trade Expenses	21,600		
Travel Expenses	15,510		
Furniture	1,74,000		
Goodwill	18,000		
Cash in hand	6,510		
Prizes distribution	9,000		
	7,70,400		7,70,400

The closing stock was ₹ 45,000 but there was a loss by fire on September 15 to the extent of ₹ 15,000. The stock was covered by an Insurance Policy of ₹ 18,000. The claim of ₹ 6,300 was admitted. Depreciate furniture by 10%. General Manager Commission @ 10% on net profit after charging the commission of works manager. Works manager is to be given commission @ 5% on net profit after charging the commission of General Manager. You are required to prepare Trading and P&L account.

[15]

OR

Q.5 Elucidate the function of Financial Management.

[15]

1C7114

Roll No. _____

Total No of Pages: **2**

1C7114

MCA I - Sem. (Main/Back) Exam., Dec. 2019
MCA-104A Computer Architecture

Time: 3 Hours

Maximum Marks: 80
Min. Passing Marks: 32

Instructions to Candidates:

Attempt all question. Marks of question are indicated against each question.

*Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)*

1. NIL

2. NIL

Q.1 Answer the following questions in 1-2 lines -

[$10 \times 1 = 10$]

- (a) What is EBCDIC?
- (b) What is bi directional shift resister in digital computer?
- (c) What is the difference between computer architecture and comport organization?
- (d) What do you understand by EPROM and ROM?
- (e) Convert the following number $(55.365)_{10} = (?)_2$.
- (f) What is the difference between Secondary and Primary Memory?
- (g) Name the different registers of computer system?
- (h) What is the difference between Compiler and Assembler?
- (i) What is Address Bus?
- (j) What do you understand by Latches?

Q.2 Answer the following questions in 50 words - [5×3=15]

- (a) What do you understand by Combinational circuit and Sequential circuit? Explain with example.
- (b) What are the difference between Linker and Loader?
- (c) What do you understand by Floating point representation? Explain by taking example.
- (d) Convert following gates by using NAND gates and NOR Gates.
 - (i) AND
 - (ii) OR
 - (iii) NOT
- (e) What do you understand by Cache memory organization? Explain.

Q.3 Answer the following questions in 150 words each - [5×4=20]

- (a) Explain the architectural diagram how each bit of instruction set decoded and how does it is connected to timing signals from T₀ TO T₁₅ in case of 4 bit sequence counter.
- (b) Compare Following –
 - (i) Flip Flops & Latches
 - (ii) Encoder & Decoder
- (c) What do you understand by Computer Instruction? Explain its format.
- (d) What is Direct Memory Access (DMA)? Explain its working with suitable diagram.
- (e) What do you understand by SIMD Array Processor? Explain its working.

Q.4 (a) Sketch the logic system for a clocked S – R and J – K flip flop. Explain their working. [10]

- (b) What do you understand by virtual memory organization? Explain in detail its working.

Q.5 (a) Explain Array and Vector Processors and their working in detail. [10]

- (b) What do you understand by Interrupt? Explain Interrupt routine. [7]

OR

Q.5 Explain the instruction set and architecture of 8085 Microprocessor with the help of functional block diagram. [15]

1C7113

Roll No. _____

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Total No of Pages: **2**

1C7113

MCA I - Sem. (Main/Back) Exam., Dec. 2019

MCA-103A Operating System

Time: 3 Hours

Maximum Marks: 80
Min. Passing Marks: 32

Instructions to Candidates:

Attempt all question. Marks of question are indicated against each question.

*Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)*

1. NIL

2. NIL

Q.1 Answer the following questions in one line –

[10×1=10]

- (a) What is a deadlock?
- (b) List process states.
- (c) What do you mean by multiprogramming?
- (d) What is the need of one time passwords?
- (e) Write the difference between Kernel and Shell.
- (f) Define Swapping.
- (g) Discuss the role of Operating System.
- (h) Enumerate different types of Schedulers and their role.
- (i) What is dirty bit used for?
- (j) Write the necessary conditions for deadlock.

Q.2 Answer the following questions in maximum 50 words –

[5×3=15]

- (a) Discuss Operating system structure.
- (b) What are threads? Explain.
- (c) Explain producer-consumer problem.
- (d) Differentiate between program threats and system threats.
- (e) Diagrammatically show the disk structure.

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Q

Q.3 Answer the following questions in maximum 150 words – [5×4=20]

(a) Write different methods in which Inter process communication takes place.

(b) Explain different types of semaphores.

(c) Briefly explain how a page fault is handled.

(d) For a set of processes P₁, P₂, P₃ and a set of resources R₁, R₂, R₃ following is the status of request and assignment –

Resource	Assigned to	Requested by
R ₁	P ₂	P ₁
R ₂	P ₁	P ₂
R ₃	P ₃	P ₂

Considering only one instance of each resource, draw the Resource Allocation graph and indicate whether the system is in deadlock or not.

(e) Discuss Windows –NT design principles.

Q.4 Answer the following equations –

(a) Assuming that the Head pointer starts at 53, illustrate the disk movement for the requests – [10]

98, 183, 37, 122, 14, 124, 65, 67 in different disk scheduling algorithms. Which one do you think would be suitable to use in this scenario.

(b) With the help of suitable example explain paging and segmentation. [10]

Q.5 List CPU scheduling criteria. Explain different scheduling algorithms. [15]

OR

For the following reference string –

7 0 1 2 0 3 0 4 2 3 0 3 2 1 and 3 frames, illustrate the page replacement in case of FIFO, [3×5=15]

Optimal and LRU.

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1C7104

Roll No. _____

Total No of Pages: **2**

1C7104

MCA I Sem. (Back) Exam., Dec. 2019

MCA -104(O) Programming in C

Time: 3 Hours

**Maximum Marks: 80
Min. Passing Marks: 32**

Instructions to Candidates:

Attempt all questions. Marks of question are indicated against each question.
Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)

1. NIL

2. NIL

[$10 \times 1 = 10$]

Q.1 Answer the following questions in 1 or 2 lines-

- (a) Define Algorithm. What are its characteristics?
- (b) What is a flowchart?
- (c) Define constant.
- (d) What is the function available in 'C' programming language to display output on screen?
- (e) What do you mean by two-dimensional arrays?
- (f) What is a function?
- (g) What do you mean by header files?
- (h) Differentiate between Structure and Union.
- (i) What are the naming conventions of a variable?
- (j) What are command line arguments?

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[$5 \times 3 = 15$]

Q.2 Answer the following questions in 50 words -

- (a) What are arithmetic and relational operators? Explain then with a suitable example.
- (b) Explain the various data types available in 'C' programming language.
- (c) Write a C program to display the maximum of three numbers.
- (d) What are different storage class specifiers?
- (e) What is a pointer? How it is declared and defined? Give an example.

Q.3 Answer the following questions in approximately 150 words each -

[$4 \times 5 = 20$]

- (a) Write a program to print the series of 1 to n natural numbers.
- (b) Write a program to concatenate two strings and store the result into a third string.
- (c) What do you mean by recursion? Explain it with the help of an example.
- (d) What do you mean by system calls?

Q.4 Write short notes on (any two) -

[$2 \times 10 = 20$]

- (a) Dynamic Memory Allocation
- (b) Break and continue statement
- (c) Pre - Processor Directives
- (d) Pointers to Structures with an example.

Q.5 Write a program to copy one file into another file.

[15]

OR

Q.5 What are the various looping statements available in 'C' programming language?

Explain all of them with the help of an example.

[15]

1C7112

Roll No. _____

Total No of Pages: **2**

1C7112

MCA I - Sem. (Main/Back) Exam., Dec. 2019

MCA-102A Programming in C & C++

Time: 3 Hours

**Maximum Marks: 80
Min. Passing Marks: 32**

Instructions to Candidates:

*Attempt all question. Marks of question are indicated against each question.
Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)*

1. NIL

2. NIL _____

[$10 \times 1 = 10$]

Q.1 Answer the following question in 1-2 lines-

- (a) How are algorithms different from flowcharts?
- (b) What are single comments incorporated in C++?
- (c) What is Keyword?
- (d) What is String?
- (e) What is dynamic memory allocation?
- (f) What is system calls.
- (g) Explain concepts of array.
- (h) What is recursion?
- (i) What is enumeration?
- (j) Explain concept of files.

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[1C7112]

Q.2 Answer the following questions in 50 words.

[$5 \times 3 = 15$]

- (a) What is data types? Explain in details.
- (b) What do you understand of strings?
- (c) Explain the feature of pointers.
- (d) What are the uses of structure?
- (e) What is call by value and call by reference?

Q.3 Answer the following questions in Approximately 150 words each:

[$5 \times 4 = 20$]

- (a) What are friend functions? Explain with the help of an example.
- (b) What a program to copy one string to another?
- (c) Explain Conditional Statements with example.
- (d) What is Data Validation? Explain.

Q.4 Write Short Notes (any two):

[$2 \times 10 = 20$]

- (a) Malloc function
- (b) Union and Structure
- (c) Getchar () and Putchar ()

Q.5 (a) Write a program of Matrix multiplications with example.

[15]

OR

- (b) What is the base address? How is it accessed differentially for one dimensional and two dimensional array?

[15]

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1C7111

Roll No. _____

121219

Total No of Pages: **4**

1C7111

MCA I - Sem. (Main/Back) Exam., Dec. 2019
MCA-101A Discrete Mathematics

Time: 3 Hours

Maximum Marks: 80

Min. Passing Marks: 32

Instructions to Candidates:

Attempt all question. Marks of question are indicated against each question.

*Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)*

1. NIL

2. NIL

Q.1 Answer each of the following – [10×1=10]

- (a) Define types of sets.
- (b) Let $M = \{1, 2, 3, 4, 5\}$ and let R be an equivalence relation, $R = \{(1, 1), (1, 2), (2, 1), (2, 2), (2, 5), (3, 4), (4, 3), (3, 3), (4, 5)\}$ Determine $\frac{A}{R}$.
- (c) Define path with an example.
- (d) Find the order of each element in the group $(G, +)$ where $G = \{0, 1, 2, 3, 4\}$.
- (e) Define method of contradiction with an example.
- (f) Give an indirect proof of the theorem. If $n^3 + 5$ is odd, then n is even.
- (g) Define cyclic group with an example.
- (h) Define Lattice with an example.
- (i) Define Pigeon hole principle.
- (j) A survey show 74% of Indian like mangoes and 68% bananas. What percentage like both the fruits?

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[5×3=15]

Q.2 Answer each part -

- (a) Find the domain and range of

$$f(x) = \frac{1}{\sqrt{4+3 \sin x}}$$

- (b) Show that $F: R \rightarrow R$ defined by $f(x) = 2x^5 + 3$ is bijection.

- (c) State the converse, contra positive and inverse of given implication:

"If it is snows today, then I will stay at home".

- (d) In 100 out of the 120 students of mathematics at a college take atleast one of the languages, Hindi, English and German. Also let 65 study Hindi, 45 study English and 42 German. If 20 study Hindi and English, 25 study English and German and 15 study Hindi and German. Find the number of student who study all the three languages.

- (e) Draw the graph $K_{3,3}$.

Q.3 Answer the each part -

[5×4=20]

- (a) Find the rank of matrix :

$$A = \begin{bmatrix} 1 & 2 & 1 \\ 2 & 3 & 1 \\ 1 & 1 & 2 \end{bmatrix}$$

- (b) Find the number of integers between 1 and 200 that are divisible by any one of the integers 2, 3 and 5.

- (c) Find the conjunctive normal form of $(q \vee (p \wedge r) \wedge \sim ((p \vee r) \wedge q))$ by constructing truth table.

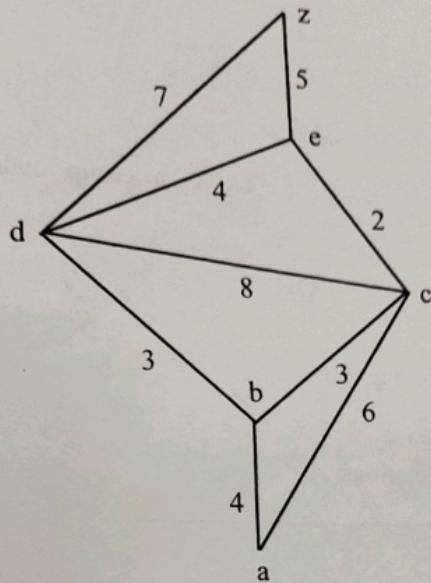
- (d) If R_1 and R_2 be two equivalence relation on a set S , then prove that $R_1 \wedge R_2$ is also an equivalence relation on S .

[1C7111]

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(c) Find the short path from vertex A to vertex Z in the weighted graph given.



Q.4 (a) Find Eigen value and Eigen vector of a matrix

[10]

$$\begin{bmatrix} 1 & 1 & -2 \\ 1 & -2 & 1 \\ -2 & 1 & 1 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 5 \\ -2 \\ 4 \end{bmatrix}$$

(b) Answer the following question concerning the poset $\{2, 4, 6, 9, 12, 18, 27, 36, 48, 60, 72\}$ (divides)

[10]

(i) Find the maximal and minimal elements.

(ii) Find the greatest and least element if exists.

(iii) Find least upper bound (LUB) of $\{2, 9\}$.

(iv) Find greatest lower bound of $\{60, 72\}$, if it exists.

[280]

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Q.5 (a) Use mathematical induction to prove that sum of first n odd positive integers
in n^2 . [5]

(b) Let $F : S \rightarrow S$ [10]

$$f_1(x) = x, f_2(x) = 1 - x, f_3(x) = \frac{1}{x}$$

$$f_4(x) = \frac{1}{1-x}, f_5(x) = 1 - \frac{1}{x}, f_6(x) = \frac{x}{x-1}$$

Show that $G = \{f_1, f_2, f_3, f_4, f_5, f_6\}$ is a group under the operation of composition.

OR

Write short notes on –

(a) Matrix Representation of a graph [5]

(b) Topological Sorting [5]

(c) Permutations and Combinations. [5]

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Total No of Pages:

1C7111

MCA I Sem. (Main/Back) Exam. Dec. 2017
MCA-101 A Discrete Mathematics

Time: 3 Hours

Maximum Marks: 80

Min. Passing Marks: 32

Instructions to Candidates:

Attempt all question. Marks of question are indicated against each question.

Use of following supporting material is permitted during examination.

(Mentioned in form No.205)

1. NIL

2. NIL

Q.1 Answer the following questions in one line: -

[10×1=10]

- (a) Define Venn diagram.
- (b) Define Void Relation.
- (c) Write Truth table of biconditional statement.
- (d) Explain Modus Tollens Rule.
- (e) Define Circuit.
- (f) What are normal subgroups?
- (g) What is the Principle of Extension?
- (h) Define the Walk.
- (i) Define bounded lattices.
- (j) Write full form of BDNF.

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[600]

[1C7111]

[5×3=15]

Q.2 Answer each part in maximum 50 words: -

- (a) Write statement of Handshaking theorem?
- (b) Show that the proposition $\sim(p \wedge q)$ and $(\sim p \vee \sim q)$ are Logically Equivalent?
- (c) What are cyclic subgroups and cyclic group?
- (d) How many edges are there with 7 vertices each of Degree 4?
- (e) Explain the topological sorting?

Q.3 Answer each part in maximum 150 words: -

[5×4=20]

- (a) Show by mathematical induction that for all $n > -1$.

$$1 + 2 + 3 + \dots + n = n(n + 1)/2?$$

- (b) Define Regular and Complete graph.
- (c) What is the order of an element in the Context of groups?
- (d) The Mapping $F: R \rightarrow R^+$ Defined by $F(X) = e^x$ is an Isomorphism from the group $(R, +)$ To the Group (R', \cdot) .
- (e) Explain Euler graph with suitable example?

Q.4 (a) Let the following statement be true

[10×2=20]

If I enjoy studying, then I will study.

I will do my homework or I will not study.

I will not do my homework.

Show that the statement "I do not enjoy studying" is a true statement.

[1C7111]

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Roll No. _____

Total No of Pages: **3**

1C7111
MCA I Sem. (Main/Back) Exam. Dec. 2017
MCA-101 A Discrete Mathematics

Time: 3 Hours

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Min. Passing Marks: 32

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Q.1 Answer the following questions in one line: - [10×1=10]

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- (b) Define Void Relation.
- (c) Write Truth table of biconditional statement.
- (d) Explain Modus Tollens Rule.
- (e) Define Circuit.
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- (i) Define bounded lattices.
- (j) Write full form of BDNF.

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[600]

[1C7111]

[$5 \times 3 = 15$]

Q.2 Answer each part in maximum 50 words: -

Q.5

- (a) Write statement of Handshaking theorem?
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- (d) How many edges are there with 7 vertices each of Degree 4?
- (e) Explain the topological sorting?

Q.3 Answer each part in maximum 150 words: -

[$5 \times 4 = 20$]

- (a) Show by mathematical induction that for all $n > -1$.

$$1 + 2 + 3 + \dots + n = n(n+1)/2?$$

- (b) Define Regular and Complete graph.
- (c) What is the order of an element in the Context of groups?
- (d) The Mapping $F: R \rightarrow R^+$ Defined by $F(X) = e^x$ is an Isomorphism from the group $(R, +)$ To the Group $(R', -)$.
- (e) Explain Euler graph with suitable example?

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[$10 \times 2 = 20$]

If I enjoy studying, then I will study.

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[1C7111]

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Roll No. _____

Total No of Pages: **3**

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MCA I Sem. (Main/Back) Exam. Dec. 2017
MCA-101 A Discrete Mathematics

Time: 3 Hours

Maximum Marks: 80

Min. Passing Marks: 32

Instructions to Candidates:

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Use of following supporting material is permitted during examination.

(Mentioned in form No.205)

1. **NIL**

2. **NIL**

Q.1 Answer the following questions in one line: -

[$10 \times 1 = 10$]

- (a) Define Venn diagram.
- (b) Define Void Relation.
- (c) Write Truth table of biconditional statement.
- (d) Explain Modus Tollens Rule.
- (e) Define Circuit.
- (f) What are normal subgroups?
- (g) What is the Principle of Extension?
- (h) Define the Walk.
- (i) Define bounded lattices.
- (j) Write full form of BDNF.

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[1C7111]

[5×3=15]

Q.5

Q.2 Answer each part in maximum 50 words: -

- (a) Write statement of Handshaking theorem?
- (b) Show that the proposition $\sim(p \wedge q)$ and $(\sim p \vee \sim q)$ are Logically Equivalent?
- (c) What are cyclic subgroups and cyclic group?
- (d) How many edges are there with 7 vertices each of Degree 4?
- (e) Explain the topological sorting?

Q.3 Answer each part in maximum 150 words: -

[5×4=20]

- (a) Show by mathematical induction that for all $n > -1$.

$$1 + 2 + 3 + \dots + n = n(n+1)/2?$$

- (b) Define Regular and Complete graph.
- (c) What is the order of an element in the Context of groups?
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- (e) Explain Euler graph with suitable example?

Q.4 (a) Let the following statement be true

[10×2=20]

If I enjoy studying, then I will study.

I will do my homework or I will not study.

I will not do my homework.

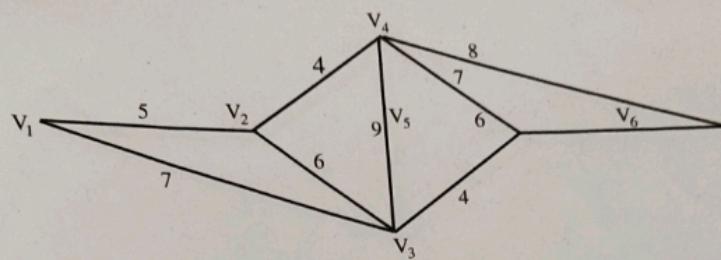
Show that the statement "I do not enjoy studying" is a true statement.

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(b) Find the shortest path between V_1 to V_6



Q.5 Show that $Z_5 = \{0, 1, 2, 3, 4\}$ Is An Abelian group for the operation '+'?

[15]

OR

Q.5 Show that the relation 'Is congruent To' on the set of all triangles in plane is an equivalence relation?

[15]

[600]

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[1C7111]

1C7103

Roll No. _____

15/12/17

Total No of Pages: **2**

1C7103

**M.C.A. I Sem. (Back) Exam. Dec. 2017
MCA-103 (O) Database Management System**

Time: 3 Hours

Maximum Marks: 80

Min. Passing Marks: 32

Instructions to Candidates:

Attempt all question. Marks of question are indicated against each question.

Use of following supporting material is permitted during examination.

(Mentioned in form No.205)

1. NIL

2. NIL

Q.1 Explain following in one line only - [1×10=10]

- (a) What is database?
- (b) Explain atomicity of a transaction.
- (c) Define primary Key.
- (d) What is Schema?
- (e) What is SQL?
- (f) Define foreign Key.
- (g) What is relational algebra?
- (h) Define sub Queries.
- (i) What is a Query tree?
- (j) List the steps in Query processing

Q.2 Explain following in Maximum 50 words -

[$3 \times 5 = 15$]

- (a) Briefly discuss the history of Management system.
- (b) Give the syntax for creating an index in SQL.
- (c) Explain relational model.
- (d) Give difference between hierarchical models and relational models.
- (e) Explain the concept of normalization using FD.

Q.3 Explain following in maximum 150 words -

[$4 \times 5 = 20$]

- (a) Explain the concept of Functional dependencies.
- (b) Explain extended E – R model.
- (c) Give difference between database system and file system.
- (d) Explain SQL data types and Literals.
- (e) Write and explain the concept of aggregate functions.

Q.4 Answer the following in detail:-

- (a) Explain ER modelling with the help of database for a student management system?
- (b) Define Normalization. Explain 1 NF, 2 NF, 3 NF, BCNF using appropriate examples. [10]

Q.5 Write and explain SQL operators and their procedure along with insert, update and delete operations in detail. [10]

[15]

OR

Q.5 Explain Relational model in detail along with storage organizations for relations. [15]

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1C7112

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Total No of Pages: **2**

1C7112

MCA I Sem. (Main/Back) Exam. Dec. 2017
MCA-102A Programming in C &C++

Time: 3 Hours

Maximum Marks: 80

Min. Passing Marks: 32

Instructions to Candidates:

Attempt all question. Marks of question are indicated against each question.

Use of following supporting material is permitted during examination.

(Mentioned in form No. 205)

1. NIL

2. NIL

Q.1 Answer the following questions in 1-2 lines.

[$1 \times 10 = 10$]

- (a) Explain concept of Algorithm.
- (b) Explain flow-chart and its elements.
- (c) Explain concept of pointer.
- (d) What are data type qualifiers?
- (e) What is structured programming approach?
- (f) Explain concept of encapsulation.
- (g) Explain concept of data hiding.
- (h) Explain keyword static.
- (i) Explain object of C++.
- (j) Explain destructor of C++.

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Q.2 Answer the following questions in 50 words:

[$5 \times 3 = 15$]

- (a) Explain constructor overloading.
- (b) Describe access specifier and their implementation.
- (c) Write a program showing use of 'this' pointer.
- (d) WAP for a global function accessing private member of class.
- (e) Write down concept of inheritance and explain its types.

Q.3 Answer the following questions in approximately 150 words each:

[$5 \times 4 = 20$]

- (a) WAP to demonstrate nesting of structures.
- (b) Demonstrate swapping of two numbers using function and displaying output of swapping in main().
- (c) Demonstrate working of 'friend class'.
- (d) Demonstrate Binary operator overloading.

Q.4 (a) Write a simple program to show use of constructor and destructor in C++. Also

show use of new & delete operator in the same program.

(b) Write short note on:-

[10]

- (i) Malloc
- (ii) Data Abstraction
- (iii) Inline function
- (iv) Unary operator overloading
- (v) Scope resolution operator

[$5 \times 2 = 10$]

Q.5 Write concept of virtual function in C++. Also explain concept of pure virtual function and show implementation by a program.

OR

[15]

(a) Explain with help of program concept of virtual base class.

[8]

(b) What is exception handling? Demonstrate with help of program.

[7]

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