

(Please write your Enrollment Number)

Enrollment No. 04704092015

MINOR – II EXAMINATION
(November-2015)

Subject Code: MCA-101

Subject: Fundamentals of IT

Time : 1 ½ Hours

Maximum Marks : 30

Note: Q. 1 is compulsory. Attempt any two questions from the rest.

Q1

(2.5x4=10)

- (a) Explain five communication protocols?
- (b) Differentiate a process from thread. Write a short note on threading issues.
- (c) Difference between i) Compiler and Interpreter ii) Linker and Loader
- (d) Mention five characteristics MS-DOS and UNIX OS for each of them.

Q2

(7,3)

- (a) Explain functionalities of Operating system. Discuss batch processing, multiprogramming, multiprocessing, multi tasking, multi user and time sharing OS.
- (b) Explain different networking devices with diagram.

Q3

(5,5)

- (a) Explain database management system and its types.
- (b) Discuss different types of network. Difference between internet, intranet and extranet.

Q4

(5,5)

- (a) What is Digital signature? How does it works and its services.
- (b) Explain : (i) Scheduling and it's types
(ii) Process state transition with diagram

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MINOR - II EXAMINATION
(Aug.-Dec. 2015)

Subject Code: MCA 103	Subject: Problem Solving Using C Programming
Time : 1 ½ Hours	Maximum Marks : 30
Note: Q. 1 is compulsory. Attempt any two questions from the rest.	

Q1	(2*5)
(a)	The keyword used to transfer control from a function back to the calling function is
(b)	How many parameters should a function have?
(c)	How do we get pointer value and address?
(d)	Write the syntax of one function each, to read and write data from a file using C programming.
(e)	Name the 3 types of streams used in C programming.
Q2	(5,5)
(a)	What will be output of following c code? <pre>#include<stdio.h> int main(){ int *p1,**p2; double *q1,**q2; printf("%d %d ",sizeof(p1),sizeof(p2)); printf("%d %d",sizeof(q1),sizeof(q2)); getch(); return 0; }</pre>
(b)	What is a function prototype? What should you prototype a function?
Q3	(5,5)
(a)	What will be output if you will compile and execute the following c code? <pre>#include<stdio.h> void main(){ printf("\nhello"); main(); return 0; }</pre>
(b)	Explain call by value and call by reference with example.
Q4	(10)
	Write a C program to create an Employee file containing employee records. Each employee record should contain employee code, name, department and basic salary (BS). Use another function to process the Employee file and read employee records, record by record and calculate salary information as TA= 5% of BS DA = 9% of BS HRA = 11% of BS IF BS > 10000, THEN TAX= 20% OF BS, ELSE TAX = 0. Display the employee salary chart.

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Enrollment No. 04704092015

Second Minor Examination
(November-2015)

Subject Code: MCA 105

Subject: Discrete Mathematics

Time : 1 ½ Hours

Maximum Marks : 30

Note: Q. 1 is compulsory. Attempt any two questions from the rest.

Q1

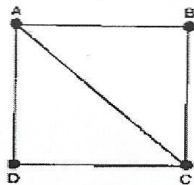
(2x5=10)

- (a) In a Group G , if $(ab)^2 = a^2b^2$, then show that G is Abelian.
- (b) Define the following terms: Cut-set and Bipartite Graphs.
- (c) Give the Recurrence Relation for Fibonacci series and solve it.
- (d) Define Join, Meet, Least element and Greatest element in a lattice giving an example.
- (e) Simplify and draw the Boolean circuit $f(x,y,z) = xyz + xy'z$

Q2

(4,4,2)

- (a) Find the Chromatic Polynomial for the given graph:

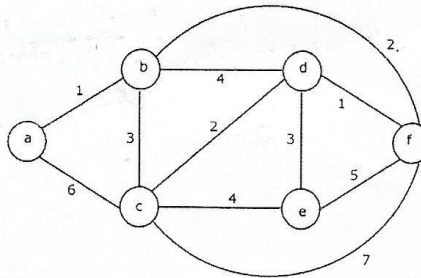


- (b) Check whether D_{42} is a lattice or not. If it is a lattice check whether it is complemented or not, and hence find the complement of each element.
- (c) Define Ring and give its properties.

Q3

(3,4,3)

- (a) Using Kruskal's or Prim's Algorithm, find the minimal spanning tree for the given graph:

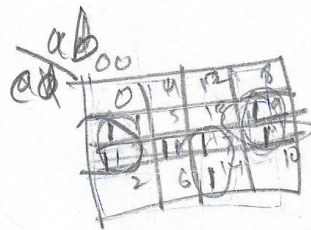


- (b) Solve the given Recurrence Relation: $a_{n+2} - 5a_{n+1} + 6a_n = 2$, such that $a_0=1, a_1=-1$.
- (c) Let a, b, c be elements in a lattice (L, R) . Show that $a \vee (b \wedge c) R (a \vee b) \wedge (a \vee c)$.

Q4

(4,4,2)

- (a) Using K-maps, solve the following Boolean function $F(a,b,c,d) = \sum(1,3,7,9,11,14,15)$
- (b) State and prove the Euler's formula for planar graphs.
- (c) What is a Monoid? Give an example.



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Enrollment No. 47

**Second Minor Examination
(November-2015)**

Subject Code: MCA 107

Subject: Computer Organization

Time : 1 ½ Hours

Maximum Marks : 30

Note: Q. 1 is compulsory. Attempt any two questions from the rest.

Q1

(2.5x4=10)

- (a) Explain array processing with an example.
- (b) How many interrupts are there in program control, describe briefly?
- (c) Discuss any two address translation schemes used in virtual memory environment.
- (d) What do you mean by a page fault?

Q2

(5,5)

- (a) What are the various modes of data transfer? Explain each of them.
- (b) Discuss different types of mapping procedures in consideration with the organization of Cache memory.

Q3

(5,5)

- (a) Draw the space diagram for a six-segment pipeline showing the time it takes to process eight tasks. A nonpipeline system takes 50 ns to process a task. The same task can be processed in a six-segment pipeline with a clock cycle of 10 ns. Determine the speedup ratio of the pipeline for 100 tasks. What is the maximum speed up that can be achieved?
- (b) What is the difference between isolated-I/O and memory mapped-I/O? What are the advantages and disadvantages of each?

Q4

(5,5)

- (a) Design a parallel priority interrupt hardware for a system with eight interrupt sources.
- (b) Discuss memory address map with a suitable example and its block diagram.

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Enrollment No. 04704092015

MINOR – II EXAMINATION
(Aug.-Dec. 2015)

Subject Code: MCA 109	Subject: Soft Skills
Time : 1 ½ Hours	Maximum Marks : 30
Note: All questions are compulsory.	

Q1 (I)	Write short notes on the following:	(3*2)
	(a) Relevance of Johari Window for a professional	
	(b) Managing Time effectively	
(II)	Transcribe the following words using phonetic symbols:	(1/2*10)
	Education , Fierce, Special, Audi, Discussion, Choir, Music, Churning, Treasure, Sympathy	
Q2	Read the situation given below carefully and answer the questions thereafter:	(4,4)
	<p>Shashi was a bright young girl of 22 and had recently completed her post graduation in Computer Applications. She was <u>confident</u> and <u>smart</u> and sure of her skills and technical knowledge. Her dream was to get a good offer in Software Company of repute. Since she had come to know that Siska Software Pvt Ltd. was coming to the campus to recruit students she was really excited and quite assured that she would get selected.</p> <p>During the interview Shashi answered most of the technical questions in a satisfactory manner. But when asked about her short and long term goals, she was not able to give a proper and coherent response. Also when one of the interviewer asked her in detail about the career objective mentioned in her Resume she could not defend what she had written. As a result there was a divide in the selection panel about her suitability as the right candidate and although she handled the technical questions well, she was finally not selected in the Interview.</p>	
	(a) Why do you think Shashi was not selected in the Interview despite her good technical college?	
	(b) What in your opinion are the expectations of a prospective employer from a candidate?	
Q. 3	Elaborate on the relevant Do's and Don'ts of participating effectively in a Group Discussion. Also present your opinion both in favour and against for the topic given below.	
	Social networking sites are a criminal waste of time	(6)
Q4.	What is the importance of Audience Analysis in making a Presentation effective and engaging? Briefly point out how visual aids add value to a Presentation and also comment upon different types of usages of these aids.	(5)