2016 BATCH

I MCA

II SEMESTER

REGULAR EXAMINATION

JUNE/JULY-2017

QUESTION PAPERS

ACADEMIC YEAR

2016-17

Subject Code: R16MCA2MNC

MCA - II Semester Regular Examinations, JUNE/JULY 2017
QUANTITATIVE APTITUDE AND REASONING

Time: 3 hours

Max Marks: 60

SECTION - A

All Questions carry equal marks

1) BCDE, FFFF, JIHG, _____

1.	NNNN	2.	NIJH	3.	HHHH	4.	LLLL

2) 8, _____, 48, 240, 1680

1.	12	2.	16	3.	8	4.	24

3) Pointing to a photograph. Bajpai said, "He is the son of the only daughter of the father of my brother." How Bajpai is related to the man in the photograph?

1.   Nephew   2. Brother   3. Father   4. Maternal Uncle

4) The mean temperature of Monday to Wednesday was 37®C and of Tuesday to Thursday was 34®C, if the temperature on Thursday was 4/5th that of Monday, then what was the temperature on Thursday?

1. 36.5®C   2. 36®C   3. 35.5®C   4. 34®C

5) A certain number of two digits is three times the sum of its digits. If 45 be added to it, the digits are reversed. The number is:

1. 72   2. 32   3. 27   4. 23

6) Three years ago the average age of A and B was 18 years. While C joining them now, the average becomes 22 years. How old (in years) is C now?

1. 24   2. 27   3. 28   4. 30

SECTION - B

I.

4*2=8 Marks

1.   In a certain code language if the word "COMFORT" is coded CODFFRB, them how will the word "COMMODITY" be coded in that language?

1.   CODDFIBGI   2. CODMFBDIG   3. CODMFDITG   4.COMFDRBTG

2.   In a certain code language if the word "FOCUS" is coded TVDPG, then how will you code the word "LIGHT"?

1.   UIHJM   2. UHIJM   3. UIJHM   4. None of these

3. On a Rs. 10, 000 payment order, a person has choice between 3 successive discounts of 10%, 10% and 30% and 3 successive discounts of 40%, 5% and 5%. By choosing the better one he can save (in Rupees):

1. 200   2. 255   3.400   4. 433

4. Rs. 600 are divided among A, B, C so that Rs. 40 more than 2/5 th of A's share, Rs. 20 more that 2/7 th of B's share and Rs. 10 more than 9/17 th of C's may all be equal. What is A's share (in Rupees)?

1. 150   2. 170   3. 200   4.280

II.   **4*2=8 Marks**

 1. Rahul put his timepiece on the table in such a way that at 6 P.M. hour hand points to North. In which direction the minute hand will point at 9.15 P.M. ?

1.South-East   2.South   3.North   4.West

2. Rasik walked 20 m towards north. Then he turned right and walks 30 m. Then he turns right and walks 35 m. Then he turns left and walks 15 m. Finally he turns left and walks 15 m. In which direction and how many metres is he from the starting position?

1.   15 m West   2 .   30 m East   3.   30 m West   4.   45 m East

3. A pump can fill a tank with water in 2 hours. Because of la leak, it took 2 1/3 hours to fill the tank. The leak can drain all the water of the tank in:

1. 4 1/3 hours   2. 7 hours   3. 8 hours   4.   14 hours

4. Two pipes A and B can fill a cistern in 37 ½ minutes and 45 minutes respectively. Both pipes are opened. The cistern will be filled in just half an hour, if the B is turned off after:

1.   5 min.   2. 9 min.   3. 10 min.   4. 15 min.

III.   **4*2=8 Marks**

1.RNOI : IALV : : FUIG :_____

          1. UFRT   2. UHRT   3. SHVT   4. TRFU

2.   TOEFL : OUVLG : : GMAT :_____

          1. GTPL   2. GZNT   3. GHNK   4. NONE OF THESE

3. A, B, C started a business with their investment in the ratio 1 : 3 : 5. After 4 months, A invested the same amount as before and B as well as C withdrew half of their investments. The ratio of their profits at the end of the year was:

1. 5 : 6 : 10   2.   6 : 5 :10   3.   10 : 5 : 6 4.   4 : 3 : 5

4. If 9 men working 71/2 hours a day can finish a piece of work in 20 days, then how many days will be taken by 12 men, working 6 hours a day to finish the work? It is being given that 2 men of latter type work as much as 3 men of the former type?

1. 91/2   2. 11   3. 121/2   4. 13

IV.

Find the Oddmanout for question no 1and 2

1.   1) January   2) March   3) April   4) July

2.   1) egnaro   2) ananab   3) teabdc   4) separg

3. A merchant has 1000 kg of sugar, part of which he sells at 8% profit and the rest at 18% profit. He gains 14% on the whole. The quantity (in kg.) sold at 18% profit is:

1. 560   2. 600   3. 400   4. 640

4 . A sum of money becomes Rs. 13, 380 after 3 years and Rs. 20, 070 after 6 years on compound interest. The sum (in Rupees) is:

1. 8800   2. 8890   3. 8920   4. 9040

V.

1. A, B, C, D and E are sitting on a bench. A is sitting next to B, C is sitting next to D, D is not sitting with E who is on the left end of the bench. C is on the second position from the right. A is to the right of B and E. A and C are sitting together. In which position A is sitting ?

1. Between B and D   2. Between B and C   3. Between E and D   4. Between C and E

2. P, Q, R, S, T, U, V and W are sitting round the circle and are facing the centre:

P is second to the right of T who is the neighbour of R and V.S is not the neighbour of P.

V is the neighbour of U.Q is not between S and W. W is not between U and S.   Which two of the following are not neighbours ?

1. RV   2. UV   3.RP   4.QW

3.   A bag contains 7 green and 8 white balls. If two balls are drawn simultaneously, the probability that both are of the same colour is -.

1.   8/15   2. 2/5   3. 3/5   4. 7/15
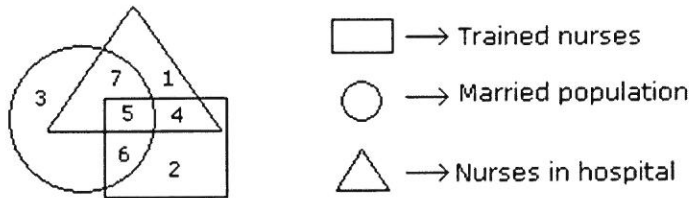
4. The probability that A speaks truth is 3/5 and that of B speaking truth is 4/7. What is the probability that they agree in stating the same fact?

1. 18/35   2. 12/35   3. 17/35   4. 19/35

VI.   **4*2=8 Marks**

Study the following figure and answer the questions given below.

□ ⟶ Trained nurses

○ ⟶ Married population

△ ⟶ Nurses in hospital

1. If hospital management requires only married trained nurses for operation theater, which part of diagram should be chosen by him ?

1.7   2.4   3.5   4. 6

2.By which number, married but untrained nurses in the hospital are represented?

1.4   2.6   3.7   4.5

3. Using all the letters of the word "NOKIA", how many words can be formed, which begin with N and end with A?

1. 3   2. 6   3. 24   4. 120

4. Find the number of ways of arranging the letters of the word "MATERIAL" such that all the vowels in the word are to come together?

1. 720   2. 1440   3. 1860   4. 2160

***

Subject Code: R16MCA205

MCA II Semester Regular Examinations, June-2017
ORGANIZATIONAL STRUCTURE AND PERSONNEL MANAGEMENT

Time: 3 hours   Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B.**

Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B

All questions carry equal marks of 12.

PART-A

1. (a) What are levels of Management?

(b) Differentiate formal and informal organizations.

(c) Briefly explain any four HR functions.

(d) What are the stages in strategic management process?

(e) What are the barriers of communication?

(f) What is the importance of Exit interview in organizations?

[2+2+2+2+2+2]

PART-B

4X 12 = 48

2. (a) Define the concept of Management. Briefly explain functions of Management.

(b) Explain nature and importance of Management in organizations.

3. (a) What is the importance of organizing and explain theories organization?

(b) Briefly explain types of organizational structures.

4. (a) Explain duties and responsibilities of HR managers in organizations.

(b) Briefly explain the process of recruitment and selection.

5. (a) Define strategic management and explain its importance in the context of LPG

(b) Explain SWOT analysis with an example.

6. (a) Explain Theory X and Theory Y of Motivation.

(b) Describe essentials of effective communication.

7. (a) Briefly explain HR Outsourcing and cross culture in HRM.

(b) Explain the concepts of bench marking and value chain analysis,

***

Narasaraopeta Engineering College (Autonomous)
Kotappakonda Road, Yellamanda (P.O), Narasaraopet- 522601, Guntur District, AP.

Subject Code: R16MCA204

MCA II Semester Regular Examinations, June-2017
OPTIMIZATION TECHNIQUES

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**.
Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B
All questions carry equal marks of 12.

PART-A

1. (a) Mention any four applications of Operations Research.
(b) How do you convert inequality constraints to equality constraints?
(c) Distinguish between Transportation and Assignment problems.
(d) Write the significance of Saddle point.
(e) State Dominance principle.
(f) What are the time estimates considered in PERT?

[2+2+2+2+2+2]

PART-B

4X 12 = 48

2. (a) Explain the phases of Operations Research.   (8M)
(b) What are different models in OR?   (4M)

3. (a) Use Artificial variable method to solve Min $Z = x_1 - 2x_2 - 3x_3$

Subject to $-2x_1 + x_2 + 3x_3 = 2$

$2x_1 + 3x_2 + 4x_3 = 1$ and $x_1, x_2, x_3 \geq 0$.   (8M)

(b) Write the dual of the following LPP. Max $Z = 4x_1 + 2x_2$

Subject to $x_1 - 2x_2 \geq 2$

$x_1 + 2x_2 = 8$

$x_1 - x_2 \leq 11$ and $x_1 \geq 0$ and x_2 unrestricted   (4M)

4. A company has factories at A, B and C which supply warehouses at D, E, F and G. monthly factory capacities are 160, 150 and 190 units respectively. Monthly warehouse requirements are 80, 90, 110 and 160 units respectively. Unit shipping costs in rupees are given in the table. Determine the optimum distribution to minimize shipping costs.

	D	E	F	G
A	42	48	38	37
B	40	49	52	51
C	39	38	40	43

5. A milk plant is considering replacement of a machine whose cost price is Rs.12,200 and the scrap value Rs.200. The running (maintenance and operating) costs in Rs. are found from experience to be as follows:

Year	:	1	2	3	4	5	6	7	8
Running Cost:		200	500	800	1200	1800	2500	3200	4000

Determine at which stage the machine should be replaced.

6. A garment manufacturer has to process 5 items through three stages, viz. cutting, sewing and pressing. The time taken for each of these items at the different stages is shown in hours in the following table

Items	Cutting A_i	Sewing B_i	Pressing C_i
1	40	50	80
2	90	60	100
3	80	20	60
4	60	30	70
5	50	40	110

Find an order in which these items are to be processed through these stages so as to minimize the total time involved.

7. Consider a project having the following precedence relations and estimated duration.

Activity	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Predecessors	-	A	B	C	C	E	D	E,G	C	F,I	J	J	H	K,L
Duration(min)	2	4	10	6	4	5	7	9	7	8	4	5	2	6

(i) Construct the project network diagram.

(ii) Find the optimal duration of the project and Critical path.

***

Subject Code: R16MCA203
MCA II Semester Regular Examinations, June-2017
OPERATING SYSTEMS
Time: 3 hours   **Max Marks: 60**

Question Paper Consists of **Part-A** and **Part-B.**
Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B
All questions carry equal marks of 12.

PART---A
Answer All Questions   6X 2=12 M

1. a) Define Operating System. List out the various components of operating system
   b) Describe the differences among short-term, medium scheduling
   c) Briefly explain the Readers –Writers problem.
   d) What is the purpose of Paging and page tables?
   e) Write about Resource- Allocation graph.
   f) Mention any four file attributes.
   g) What is thrashing?

PART---B   4X12 =48 M

2. a) What are system calls? Explain the different categories of system calls?
b) Explain distinguishing features of operating system in multi-programmed, real-time and distributed systems.

3. a) Define inter-process communication? What are the different methods used for logical implementation of a message passing system? Explain?
b) What is a thread? What are the differences between user level and kernel supported threads?

4. a) How does deadlock avoidance differ from deadlock prevention? Write about deadlock avoidance algorithm in detail?
b) Consider the set of processes, with the length of CPU burst in msec.

Process	P1	P2	P3	P4	P5
Arrival Time	00	02	03	06	30
Burst Time	10	12	14	16	5

Draw the Gantt chart that illustrates the execution of these processes using the preemptive shortest job (SJF) algoritm. Hence find average waiting time.

5. What is synchronization? Explain how semaphores can be used to deal with n process critical section   problem. (8M)
   b) Describe the monitor solution to the classical dining philosopher's problem?

6. a) Explain the methods used for implementing directories?
b) Why should page placement performed? Compare FIFO, optimal and LRU page replacement algorithms with an example of your choice?

7. a) What is access matrix? Explain how the access matrix is implemented effectively?
   b) Explain and compare the SCAN and C-SCAN disk scheduling algorithms.

Subject Code: R16MCA202

MCA - II Semester <u>Regular</u> Examinations, <u>June, 2017</u>
OOPS THROUGH JAVA

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**.
Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B
All questions carry equal marks of 12.

PART-A

1. (a) What are limitations of Procedure Oriented Programming?
   (b) Explain 1-D and 2-D arrays in java with example.
   (c) Define Abstract class and give example.
   (d) Describe five keywords of exception handling in java.
   (e) List out Event Sources.
   (f) Write the differences between applets & Standalone applications.

   [2+2+2+2+2+2]

PART-B

4X 12 = 48

2. Explain briefly about OOP concepts.

3. (a) Write a java application to perform matrix multiplication using "class & object".
   (b) Write a java application to sort the given strings using "String class".

4. (a) Define package. Write down the steps to create a package.
   (b) Write a java application to achieve Multiple Inheritance.

5. Explain the ways of creating a thread in Java with suitable example program for each way.

6. (a) List and explain various AWT components in Java.
   (b) Explain about event delegation model.

7. (a) Explain about the ways to create an applet with example.
   (b) How to pass parameters to an applet? Explain with an example.

***

NEC

Subject Code: R16MCA201

MCA II Semester Regular Examinations, June- 2017
DATABASE MANAGEMENT SYSTEMS

Time: 3 hours   Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**.

Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B

All questions carry equal marks of 12.

PART-A

1. (a) Define the terms Database and DBMS.

   (b) List out the Set Operations in Relational Algebra.

   (c) What is redundancy in DBMS? Give an example.

   (d) What are the states of a Transaction?

   (e) What are the differences between RAID 2 and RAID 3 levels?

   (f) What is an order of B+ tree?

                                                      [2+2+2+2+2+2]

PART-B

                                                      4X 12 = 48

2. (a) Differentiate strong entity and weak entity in ER Diagrams.

   (b) Quote examples for binary relationship and ternary relationship in ER Diagrams.

3. (a) Explain the following SQL commands with suitable example.
      1. Commit   2.Grant

   (b) Explain the DDL commands of SQL with suitable examples.

4. (a) How to compute "F^{+}"? Explain with suitable example.
   (b) Compare 3NF with 2NF. Quote examples.

5. (a) What is a transaction? Explain ACID properties of transaction.
   (b) Draw and explain life cycle of transaction.

6. Explain about RAID Levels.

7. (a) Write about static hashing and Extendable hashing.
   (b) Briefly Explain about ISAM.

***