

**MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE**

(UGC-AUTONOMOUS)

**MCA I Year I Semester (R18) Regular End Semester Examinations – Jan 2019**

(Regulations: R18)

**ENGLISH FOR COMMUNICATION**

Time: 3Hrs

Max Marks: 60

Attempt all the questions. All parts of the question must be answered in one place only.

In Q.no 1 to 5 answer either Part-A or B only

**Q.1(A) Following sentences have some errors. Rewrite them correctly. 12M**

- i) Jupiter is biggest than any other planet.
- ii) I shall post your letters while I go out.
- iii) Here is the book who you were asking for.
- iv) We had a distance view of Mt. Everest.
- v) Both Supriya and Sharayu goes to school.
- vi) Write a summary of the group discussion that take place yesterday.
- vii) Is steel a alloy?
- viii) Every poet cannot be the Tagore.
- ix) I wish I could fly in a sky.
- x) Rahul Dravid is one of the popular cricketer of all times.
- xi) I and Justine went to see a movie.
- xii) The post office seems to be quiet far.

**OR****Q.1(B) Fill in the blanks with correct forms of the verbs given in the bracket below. 12M**

- i) Bheema \_\_\_\_\_ to the college everyday (go: simple present).
- ii) The visitors \_\_\_\_\_ by the home team (beat: past perfect).
- iii) Shailesh \_\_\_\_\_ royal treatment wherever he goes (give: present perfect).
- iv) The boys \_\_\_\_\_ football yesterday (play: past continuous).
- v) She \_\_\_\_\_ write the mail after lunch (simple future).
- vi) There \_\_\_\_\_ three crows on the tree branch (Simple past – “be” form).
- vii) Rs. 20, 000 a month \_\_\_\_\_ a good salary for a beginner (simple present – ‘be’ form).
- viii) The boys \_\_\_\_\_ table tennis (play: past continuous).
- ix) The young children in this school \_\_\_\_\_ Yoga classes twice a week (have: simple present).
- x) Either the boys or their parents’ \_\_\_\_\_ the report cards (collect: present perfect).
- xi) Neither Rupali nor Vaishali \_\_\_\_\_ attending the meeting (Simple present – ‘be’ form).
- xii) Roy and Lara \_\_\_\_\_ the fair (go: simple present continuous with ‘be’ form).

**Q.2(A) i) What is Communication Skills? “Having good English communication skills is important for your professional career”, explain in your own words. 12M****OR****Q.2(B) ii) For the smooth flow of communication, one has to follow a proper procedure/process. Describe in detail the ‘process of communication’. 12M**

Q.3(A) i) "Listening is one of the significant traits of soft skills". Discuss this statement in order to highlight the significance of listening skills. 12M

OR

Q.3(B) ii) What is written communication? Discuss its features at length. 12M

Q.4(A) i) What is oral presentation? What factors would you bear in mind to make an effective oral presentation? 12M

OR

Q.4(B) ii) Discuss in detail various ways/types of making presentations, like Video conferencing, participation in meetings, chairing sessions etc. 12M

Q.5(A) i) **Write a letter of application along with your resume based on the details given below:** 12M

Advertisement: Daljeet Industries limited need Sales Executives in their sales department. Candidates should be graduates and have at least seven years of experience in this field. Age should be around 35 years. Salary is negotiable. Write in confidence within fifteen days to the General Manager (Marketing) 51, Tolstoy Marg, New Delhi – 110003

Assume that you are Rajiv Gupta. You have a post-graduation in Sales Management Studies. You have worked as a Sales Executive in 'Lombard Sales Company' for 9 years. Now, you are looking for better working conditions and a better pay. You came across an advertisement in the Times of India for the post of Sales Executive in Daljeet Industries. Draft a letter along with your resume in response to the advertisement.

OR

Q.5(B) ii) Explain in detail the various components involved in drafting a letter of application. 12M

\*\*\* END\*\*\*

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**DISCRETE MATHEMATICS**

Time: 3Hrs

Max Marks: 60

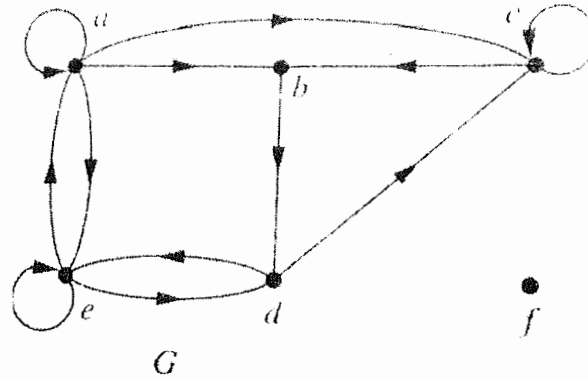
Attempt all the questions. All parts of the question must be answered in one place only.

In Q.no 1 to 5 answer either Part-A or B only

- Q.1(A) (i) How can this English sentence be translated into a logical expression? 3M  
"You can access the Internet from campus only if you are a computer science major or you are not a freshman"
- (ii) Let  $p, q, r$  be the propositions. 3M  
 $p$ : You have the flu  
 $q$ : You miss the final examination  
 $r$ : You pass the course  
Express the following propositions as an English sentence  $(p \wedge q) \vee (\neg q \wedge r)$
- (iii) Use truth table to verify the distributive law  $p \wedge (q \vee r) \equiv (p \wedge q) \vee (p \wedge r)$ . 6M
- OR**
- Q.1(B) (i) Obtain the principal conjunctive and disjunctive normal form of the following 6M  
 $(q \rightarrow p) \wedge (\neg p \wedge q)$
- (ii) Show that  $r \wedge (p \vee q)$  is a valid conclusion from the premises 6M  
 $p \vee q,$   
 $q \rightarrow r,$   
 $p \rightarrow s$  and  
 $\neg s$
- 
- Q.2(A) (i) Let  $X = \{1, 2, 3, \dots, 7\}$  and  $R = \{(x, y) / x - y \text{ is divisible by } 3\}$ . 6M  
Is  $R$  an equivalence relation? If so, Draw the graph of  $R$
- (ii) Let  $f, g, h$  are functions of real numbers, show that  $(hog)of = ho(gof)$  where 6M  
 $h(x) = 6x - 3, g(x) = x^2 - 2, f(x) = 5$ .
- OR**
- Q.2(B) (i) Draw Hasse diagram representing the partial ordering  $\{(a, b) / a \text{ divides } b\}$  on the set 6M  
 $X = \{1, 2, 3, 4, 6, 8, 12\}$  and also find the minimal, maximal members, least upper bound and greatest lower bound.
- (ii) Which of these are POSETs? Explain 6M  
(a)  $\langle \mathbb{R}, < \rangle$  (b)  $\langle \mathbb{R}, = \rangle$  (c)  $\langle \mathbb{Z}, \neq \rangle$

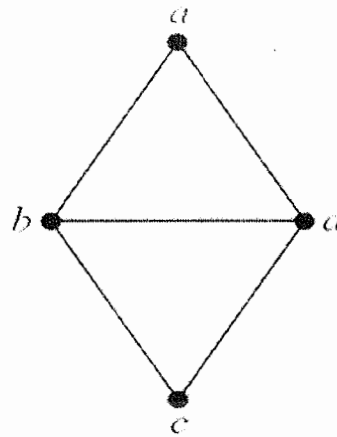
Q.3(A) (i) Find the in degree and out degree of each of the vertex in the below figure.

6M



(ii) Find the chromatic number of the following graph

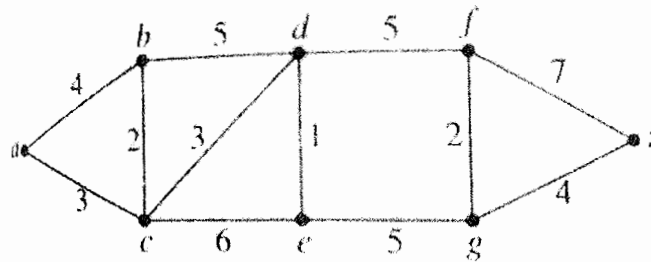
6M



OR

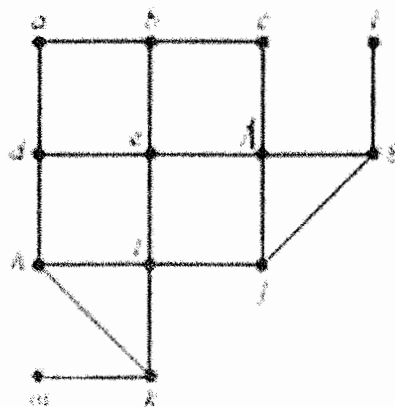
Q.3(B) (i) Use Dijkstra's algorithm to find the shortest path from vertex  $a$  to vertex  $z$  in the graph

6M



(ii) Find the minimum spanning tree of the following graph.

6M



- Q.4(A) (i) Is  $(\mathbb{Z}_5, \oplus)$  and  $\oplus$  is mod 5 addition operation group? 6M  
(ii) What is the minimum number of students required in a class to be sure that at least six will receive the same grade, if there are five possible grades A,B,C,D,E and F. 6M

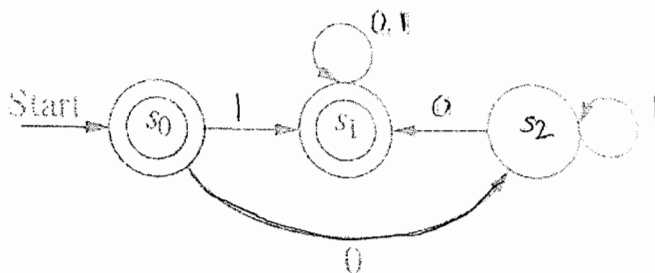
OR

- Q.4(B) (i) Prove that the set  $\{0,1,2,3,4\}$  is a finite abelian group of order 5 under addition modulo 5 as a composition. 6M  
(ii) Find the solution to the recurrence relation  $a_n = 6a_{n-1} - 11a_{n-2} + 6a_{n-3}$ ,  $a_0 = 2, a_1 = 5$  and  $a_2 = 15$ . 6M

- Q.5(A) (i) Find the hexadecimal expansion of  $(177130)_{10}$  6M  
(ii) What are the solutions of the linear congruence  $3x \equiv 4 \pmod{7}$ . 6M

OR

- Q.5(B) (i) Find the language recognized by the given deterministic finite-state automation 6M



- (ii) Construct the state diagram for the finite state machine with the following state table 6M

State	<i>f</i>		<i>g</i>	
	Input		Input	
	0	1	0	1
$s_0$	$s_0$	$s_4$	1	1
$s_1$	$s_0$	$s_3$	0	1
$s_2$	$s_0$	$s_2$	0	0
$s_3$	$s_1$	$s_1$	1	1
$s_4$	$s_1$	$s_0$	1	0

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**ACCOUNTING & FINANCIAL MANAGEMENT**

Time: 3Hrs

Max Marks: 60

Attempt all the questions. All parts of the question must be answered in one place only.

**In Q.no 1 to 5 answer either Part-A or B only**

Q.1(A) What is Book-Keeping? Explain the objectives of Book-keeping. 12M

**OR**

Q.1(B) Explain the different categories in which the accounting transactions can be classified. Also state the rules of 'debit and credit' in this connection. 12M

Q.2(A) Journalize the following transactions, post them in the Ledger and balance the accounts on 31<sup>st</sup> January. 12M

- i. Ram started business with a capital of Rs. 10,000.
- ii. He purchased goods from Mohan on credit Rs. 2,000.
- iii. He paid cash to Mohan Rs. 1,000.
- iv. He sold goods to Suresh Rs. 2,000.
- v. He received cash from Suresh Rs. 3,000.
- vi. He further purchased goods from Mohan Rs. 2,000.
- vii. He paid cash to Mohan Rs. 1,000.
- viii. He further sold goods to Suresh Rs. 2,000.
- ix. He received cash from Suresh Rs. 1,000.

**OR**

Q.2(B) Explain the Profit and Loss Account. What are the accounting entries used for preparing Profit and Loss Account? 12M

Q.3(A) What is Depreciation? Explain straight line method and diminishing value method of depreciation. 12M

**OR**

Q.3(B) Following are the details regarding the receipts and issues of material X in respect of a firm. 12M

Receipts:	Jan. 1	Balance 50 Units @ 4 per unit		
	Jan. 5	Purchase Order No. 10	40 units	@ Rs. 3 per unit
	Jan. 8	Purchase Order No. 12	30 units	@ Rs. 4 per unit
	Jan. 15	Purchase Order No. 11	20 units	@ Rs. 5 per unit
	Jan. 26	Purchase Order No. 13	40 units	@ Rs. 3 per unit

Issues:	Jan. 10	Material Requisition No. 4	70 units
	Jan. 12	Material Requisition No. 5	10 units
	Jan. 20	Material Requisition No. 6	20 units
	Jan. 24	Material Requisition No. 7	10 units
	Jan. 31	Storage 5 Units	

The firm follows the perpetual inventory system for maintaining its stores records. You are required to calculate the value of inventory on Jan. 31 according to: (i) FIFO and (ii) LIFO.

Q.4(A) What is fund flow statement? What are the steps used in preparation of fund flow statement? 12M

OR

Q.4(B) What is cash flow? Explain the difference between fund flow and cash flow statement. 12M

Q.5(A) i. What are the different types of Profitability ratios? 12M

ii. Firm ABC & Co. have a Gross Profit ratio of 20%. It has credit revenue of 10,00,000 and cash revenue is 20% of the total revenue. The indirect expenses of ABC & Co. added up to 1,50,000. Find the Net Profit ratio for the firm.

OR

Q.5(B) What is Du Pont Analysis? Explain uses of Du Pont Analysis. 12M

\*\*\* END\*\*\*

Hall Ticket No:

Question Paper Code: 18MCAP101

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**COMPUTER ORGANIZATION AND ARCHITECTURE**

Time: 3Hrs

Max Marks: 60

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In Q.no 1 to 5 answer either Part-A or B only

Q.1(A) Draw and explain the functional units of a computer with a neat diagram. 12M

OR

Q.1(B) Differentiate between sequential and combinational circuits. 12M

Q.2(A) List different addressing modes and explain briefly. 12M

OR

Q.2(B) What is micro-programmed control unit? Draw and explain basic structure of micro-programmed control unit. 12M

Q.3(A) What is Hazard? Explain how the hazards are influence on the following: 12M

- i) Instruction Set
- ii) Data Path

OR

Q.3(B) Define Exception and Explain the data hazards influence in exception handling. 12M

Q.4(A) Discuss associative mapping and direct mapping in organization of cache memory. 12M

OR

Q.4(B) List out secondary storage devices and explain each one briefly. 12M

Q.5(A) What is DMA? Explain the DMA transfer using neat diagram. 12M

OR

Q.5(B) Write short notes on the following standard I/O interfaces: 12M

- (i) PCI
- ii) SCSI
- iii) USB

\*\*\* END\*\*\*



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**PROBLEM SOLVING WITH PYTHON**

Time: 3Hrs

Max Marks: 60

Attempt all the questions. All parts of the question must be answered in one place only.
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In Q.no 1 to 5 answer either Part-A or B only
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- Q.1(A) Describe algorithm? Write an algorithm to generate Fibonacci sequence with a suitable explanation. 12M
- OR**
- Q.1(B) What are the problem-solving aspects? Explain in detail. 12M
- 
- Q.2(A) Define identifier. Discuss rules to define it in python. 4M  
Write short notes on logical operator and bitwise operator. 8M
- OR**
- Q.2(B) What is data type? Discuss different data types. 4M  
What are the main features of Python? Explain in detail. 8M
- 
- Q.3(A) Write a password generator in Python. Be creative with how you generate passwords - strong passwords have a mix of lowercase letters, uppercase letters, numbers, and symbols. The passwords should be random, generating a new password every time the user asks for a new password 12M
- OR**
- Q.3(B) Write a program to check whether the given number is multiple of 2 or 5. 4M  
What are different types of loops in python? Explain them. 8M
- 
- Q.4(A) Write a python script to multiply two matrices. 6M  
What is list in python? Explain in detail. 6M
- OR**
- Q.4(B) What is dictionary in python? Explain in detail. 6M  
What is tuple in Python? List out basic functions of tuple. 6M
- 
- Q.5(A) Explain packages using an example program. 12M
- OR**
- Q.5(B) What is file handling? Explain the related functions. 12M

\*\*\* END\*\*\*