MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)

MCA I Year I Semester (R18) Regular& Supplementary End Semester Examinations – Jan'2020

(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)   **Fill in the blanks with appropriate answer from the given options.**   12M
1) Our country is spiritual country, theirs . . . . . . religious.
   A. is B. are C. also D. have
2) I . . . . . . you yesterday.
A. was met B. did met C. meted D. met
3) Look at all those black clouds! It........today.
A. is going to rain B. is raining C. will be rain D. rains
4) Please, stop . . . . . so many mistakes.
A. to make B. make C. making D. makes
5) The English . . . . . English.
A. speak B. spoke C. spoken D. is spoken
6) All the winners . . . . . prizes tomorrow.
   A. will be given B. will be given C. will be giving D. will have given
7) Don't disturb the principal. He . . . . . in his chamber.
   A. sleeping B. is sleeping C. sleeps D. slept
8) There . . . . . many children on the playground yesterday.
   A. are B. were C. did D. playing
9) Early to bed and early to rise . . . . . . a man healthy, wealthy.
   A. make B. makes C. shall make D. made
10) Have you ever . . . . . Taj Mahal?
    A. see B. saw C. seen D. have seen
11) My husband with his colleagues . . . . . golf now.
    A. are play B. are being play C. is playing D. are playing
12) We saw him . . . . . . a tree yesterday.
    A. cutting B. cut C. to cut D. was cutting

OR

Q.1(B)   **Following sentences have some errors in them. Correct the following sentences and**   12M
rewrite them.
1. I went to the India in 1967.
2. I used to having a horse.
3. I live here since 1997.
4. He knows her for ten years.
5. I went to work with the bus.
6. At this time tomorrow, I'll be fly to Tokyo.
7. My parents consider me as there favorite child.
8. My house is built in 2017.
9. My birthday is on January.

10. Can you borrow me a book please.
11. She drinks much coffee every day.
12. He doesn't have nothing to do.

Q.2(A) Read the following passages and answer the given questions.   12M
Passage-1
The Indian Premier League (IPL) is a professional Twenty20 cricket league in India contested during April and May of every year by 8 teams representing 8 cities of India. The league was founded by the Board of Control for Cricket in India (BCCI) in 2008, and is regarded as the brainchild of Lalit Modi, the founder and former commissioner of the league. IPL has an exclusive window in ICC Future Tours Programme.
The IPL is the most-attended cricket league in the world and in 2014 ranked sixth by average attendance among all sports leagues. In 2010, the IPL became the first sporting event in the world to be broadcast live on YouTube. The brand value of IPL in 2018 was US$6.3 billion, according to Duff & Phelps. According to BCCI, the 2015 IPL season contributed ₹11.5 billion (US$182 million) to the GDP of the Indian economy.
There have been eleven seasons of the IPL tournament. The current IPL title holders are the Chennai Super Kings, who won the 2018 season.
Questions
Q1. Indian Premier League is considered whose brainchild?
a)   Lalit Modi b)   Nirav Modi c)   Vineet Jain d)   Mukesh Ambani
Q2. How many seasons have been played of IPL till 2018?
a)   10 b)   12 c)   11 d)   9
Q3. What is the antonym of the world "professional" w.r.t it's usage in the passage?
a)   Competent b)   Amateur c)   Master d)   Polished
Q4. In which year IPL became the first sporting event to be broadcast live on an online platform?
a)   2011 b)   2010 c)   2008 d)   2012
Q5. According to Duff & Phelps, the brand value of IPL in 2018 was
a)   ₹11.5 billion b)   US $182 million c)   ₹ 6.3 billion d)   US $6.3 billion

Passage-2
In the sixteenth century, an age of great marine and terrestrial exploration, Ferdinand Magellan led the first expedition to sail around the world. As a young Portuguese noble, he served the king of Portugal, but he became involved in the quagmire of political intrigue at court and lost the king's favor. After he was dismissed from service to the king of Portugal, he offered to serve the future Emperor Charles V of Spain.
A papal decree of 1493 had assigned all land in the New World west of 50 degrees W longitude to Spain and all the land east of that line to Portugal. Magellan offered to prove that the East Indies fell under Spanish authority. On September 20, 1519, Magellan set sail from Spain with five ships. More than a year later, one of these ships was exploring the topography of South America in search of a water route across the continent. This ship sank, but the remaining four ships searched along the southern peninsula of South America. Finally they found the passage they sought near a latitude of 50 degrees S. Magellan named this passage the Strait of All Saints, but today we know it as the Strait of Magellan.

One ship deserted while in this passage and returned to Spain, so fewer sailors were privileged to gaze at that first panorama of the Pacific Ocean. Those who remained crossed the meridian we now call the International Date Line in the early spring of

1521 after ninety-eight days on the Pacific Ocean. During those long days at sea, many of Magellan's men died of starvation and disease.

Later Magellan became involved in an insular conflict in the Philippines and was killed in a tribal battle. Only one ship and seventeen sailors under the command of the Basque navigator Elcano survived to complete the westward journey to Spain and thus prove once and for all that the world is round, with no precipice at the edge.
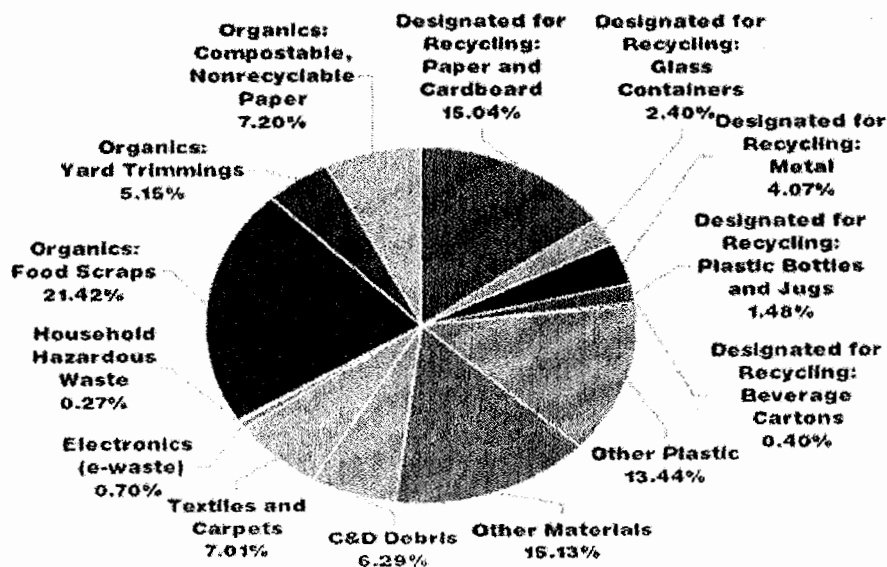
Fill in the blanks with appropriate answer from the given options.

1. The sixteenth century was an age of great ___exploration.
A. cosmic B. land C. mental D. common man E. none of the above

2. Magellan lost the favor of the king of Portugal when he became involved in a political ___.
A. entanglement B. discussion C. negotiation D. problems E. none of the above

3. The Pope divided New World lands between Spain and Portugal according to their location on one side or the other of an imaginary geographical line 50 degrees west of Greenwich that extends in a ___ direction.
A. north and south B. crosswise C. easterly D. south east E. north and west

4. One of Magellan's ships explored the ___ of South America for a passage across the continent.
A. coastline B. mountain range C. physical features D. islands E. none of the above

5. Four of the ships sought a passage along a southern ___.
A. coast B. inland C. body of land with water on three sides D. border E. answer not available

6. The passage was found near 50 degrees S of ___.
A. Greenwich B. The equator C. Spain D. Portugal E. Madrid

7. In the spring of 1521, the ships crossed the ___ now called the International Date Line.
A. imaginary circle passing through the poles B. Imaginary line parallel to the equator
C. area D. land mass E. answer not found in article

OR

Q.2(B)   What is the importance of listening? Discuss on the types and advantage of listening.   12M

Q.3(A)   12M

Organics: Compostable, Nonrecyclable Paper 7.20%
Designated for Recycling: Paper and Cardboard 15.04%
Designated for Recycling: Glass Containers 2.40%
Designated for Recycling: Metal 4.07%
Organics: Yard Trimmings 5.15%
Organics: Food Scraps 21.42%
Designated for Recycling: Plastic Bottles and Jugs 1.48%
Household Hazardous Waste 0.27%
Designated for Recycling: Beverage Cartons 0.40%
Electronics (e-waste) 0.70%
Other Plastic 13.44%
Textiles and Carpets 7.01%
C&D Debris 6.29%
Other Materials 15.13%

Summarize the above pie chart on recycling process of various materials. Write relevant information by comparing the percentage of recycling materials. Write at least 200 words.

OR

| Q.3(B) | How effective communication helps a professional? Mention the advantages of effective communication in work place. | 12M |

| Q.4(A) | Write a cover letter. Select a position for which you are qualified based on your work experience and skills. Highlight these skills and experiences and save the cover letter so you can refer to it. | 12M |

OR

| Q.4(B) | Mention the advantages of visual communication with appropriate examples. | 12M |

| Q.5(A) | Good reports often contain a five-stage structure- discuss in detail. | 12M |

OR

| Q.5(B) | As the secretary of a youth club, prepare a report on the literacy drive undertaken by your club. The report will be submitted to the secretary, Dept of Mass Education, Andhra Pradesh. | 12M |

*** END***

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MCA I Year I Semester (R18) Regular & Supplementary End Semester Examinations – Jan' 2020
(Regulations: R18)
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) Let f, g, h are functions of real numbers, show that $(hog)of = ho(gof)$ where   6M
$h(x) = x^2, g(x) = 3x + 7, f(x) = 2 + x.$

(ii) Define surjective, bijective functions with examples.   6M

OR

Q.1(B) (i) Draw the Hasse diagram representing the partial ordering $\{(a, b) / a$ divides $b\}$ on   6M
$\{1, 2, 3, 4, 6, 8, 12\}$.

(ii) Determine whether the POSETs represented by each of the Hasse diagrams given   6M
below are lattices or not.
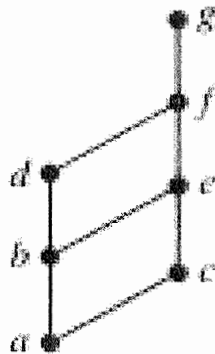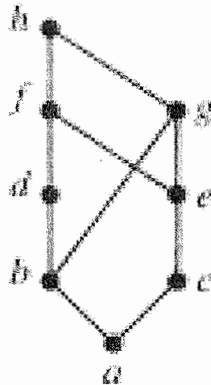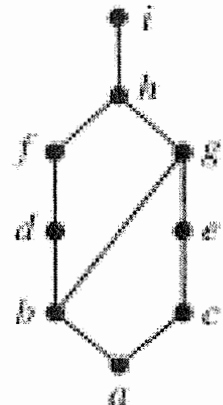
Q.2(A) (i) Explain about statement connectives in mathematical logic with an example.   6M

(ii) Define logical equivalent. Show that $\neg(p \lor (\neg p \land q))$ and $\neg p \land \neg q$ are logically   6M
equivalent by developing a series of logical equivalences.

OR

Q.2(B) (i) Show that the premises "It is not sunny this afternoon and it is colder than   6M
yesterday," "We will go swimming only if it is sunny," "If we do not go swimming,
then we will take a canoe trip," and "If we take a canoe trip, then we will be home
by sunset" lead to the conclusion "We will be home by sunset."

(ii) Prove that √2 is irrational by giving a proof by contradiction.   6M

Q.3(A)   (i) Determine whether the following graphs are isomorphic.   8M
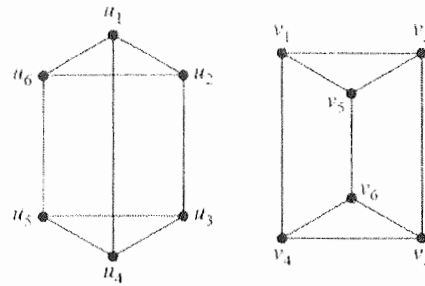
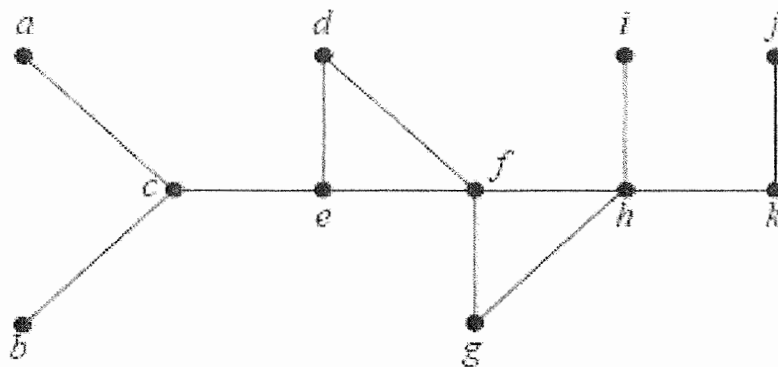(ii) Draw the digraph G corresponding to the adjacency matrix A.

$$A = \begin{bmatrix} 0 & 0 & 1 & 1 \\ 0 & 0 & 1 & 0 \\ 1 & 1 & 0 & 1 \\ 1 & 1 & 1 & 0 \end{bmatrix}$$ 4M
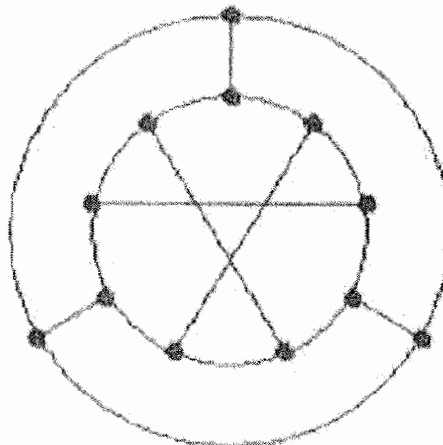
OR

Q.3(B)   i) Apply the process of DFS or BFS to obtain a spanning tree for the given graph.   8M

                                                                                        4M

ii) Find the chromatic number of the following graph.

Q.4(A)   (i) Explain Pigeonhole principle with suitable examples.   6M

(ii) Prove that $(Q^+, *)$ where * is a binary operation defined by $a * b = ab / 5$ is group.   6M

OR

Q.4(B)   (i) Use generating functions to find an explicit formula for the Fibonacci numbers.   6M

(ii) Solve the recurrence relation $a_n - 6a_{n-1} + 9a_{n-2} = 0$, $a_0 = 5, a_1 = 12$.   6M

Q.5(A) (i) Find the prime factorization of (a) 641 (b) 999   6M

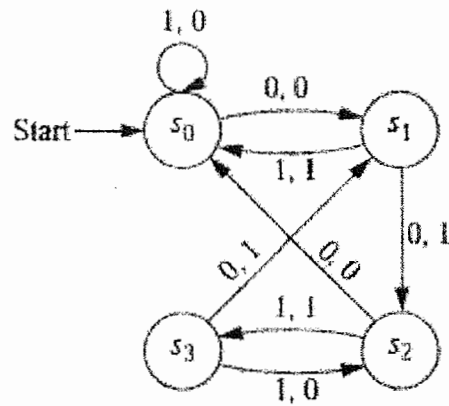   (ii) Find the binary expansion of (a) $(321)_{10}$ (b) $(1023)_{10}$ 6M

                                                    OR

Q.5(B) (i) Give the state tables for the finite-state machines with the following state diagram.   6M

                                                                                                    6M

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

State	f		g	
	Input		Input	
	0	1	0	1
s_0	s_1	s_0	0	1
s_1	s_0	s_2	0	1
s_2	s_1	s_1	0	0

*** END ***

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ACCOUNTING AND 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)   How do you classify the accounts? Explain the rules of Debit and Credit with respect   12M
to different types of accounts.

OR

Q.1(B)   What is Book keeping? Explain the objects of Book keeping.   12M

Q.2(A)   Why different financial statements are used in accounting and what purpose each   12M
statement serves?

OR

Q.2(B)   From the following transactions prepare Journal entries and post them into ledger in   12M
the books of Mr.Bhaskar

2019 March	Particulars	Amount(Rs)
1.	Goods sold for cash	2,600
5.	Goods Purchased for cash	200
8.	Purchase of goods on credit from Kumar	3,000
14.	Sale of Goods to Manikyam on credit	2,500
20.	Cash received form Manikyam	2,000
21	Cash paid to Kumar	2,000
27.	Furniture purchased for cash	300

Q.3(A)   Murali purchased a machinery on 1-1-2015 for Rs80000. The estimated scrap value at   12M
the end of ten years is Rs1,5000. Depreciation is to be written off by using Straight line
method. Show the machinery account for the first four years.

OR

Q.3(B)   From the following information, prepare stores ledger account by adopting   12M
Simple average Method

Date	Particulars
2019 March 1	Stock of material 500 units at Rs 10 each
5	Purchased 400 units @Rs 10.20 each
8	Purchased 300 units @Rs 10.50 each
11	Issued 400 units
15	Issued 40 units
17	Purchased 600 units @Rs 10.70 each
20	Returned from department 200 units
23	Issued 500 units
26	Issued 200 units
30	Loss in weight 50 units

Q.4(A) Describe the process of preparing the statement of cashflows.   12M

OR

Q.4(B) Find out the changes in working capital from the particulars of Amararaj Ltd as given   12M
below.

Capital & Liabilities	31-12-2017	31-12-2018	Assets	31-12-2017	31-12-2018
Share Capital	3,00,000	3,75,000	Machinery	70,000	1,00,000
Creditors	1,06,000	70,000	Stock	1,21,000	1,36,000
Profit & Loss A/C	14,000	31,000	Debtors	1,81,000	1,70,000
			Cash	48,000	70,000
	4,20,000	4,76,000		4,20,000	4,76,000

Q.5(A) i) M/s Shravani & Co. present the following.You are required to calculate   12M
a.Return on Capital Employed
b.Current Ratio
c.Quick Ratio
d.Fixed Assets to Networth Ratio
e.Debt-Equity Ratio.

Balance sheet as on 31st December 2018

Liabilities	(Rs)	Assets	Rs
Equity share Capital	50,000	Fixed Assets	87,500
8% Preference share Capital	10,000	Investments	25,000
Reserves	40,000	Stock	30,000
6% Debentures	20,000	Debtors	13,500
Creditors	30,000	Bank	7,000
Profit & Loss A/c	21,000	Preliminary Expenses	8,000
	1.71,000		1,71,000

OR

Q.5(B) From the following information calculate: 12M
    i)   P/V Ratio
    ii) Break Even Point
    iii) Margin of Safety
    iv) If selling price is reduced to Rs 90, by how much is the margin of safety is
         reduced?
Total sales Rs 3,60,000
Selling price per unit Rs 100
Variable cost per unit Rs 50
Fixed cost Rs 1,00,000.

*** END***

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COMPUTER ORGANIZATION & ARCHITECTURE

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)	Explain the following 　i.　　Sequential Circuits 　ii.　　Combinational Circuits	12M

OR

Q.1(B)	What is flip flop? Explain different types of Flip flops.	12M

Q.2(A)	Explain the different instruction format with examples.	12M

OR

Q.2(B)	Explain the following architecture with example 　i.　　RISC 　ii.　　CISC	12M

Q.3(A)	What is pipelining? Explain the following 　i.　　Data hazards 　ii.　　Instruction hazards	12M

OR

Q.3(B)	Explain the characteristics of instruction hazards.	12M

Q.4(A)	Differentiate the characteristics of SRAM & DRAM	12M

OR

Q.4(B)	What is cache memory? and related mapping replacement policies.	12M

Q.5(A)	What is DMA? Explain how it is interacting with memory with neat diagram.	12M

OR

Q.5(B)	What is interrupts explain different types of interrupts.	12M

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

Q.1(A)	What is an algorithm? Write an algorithm to generate Pascal triangle.	12M
	OR	
Q.1(B)	i) Explain various problem solving strategies.	6M
	ii) How to exchange the values between two variables? Explain with an example.	6M
Q.2(A)	i) Write logical and bitwise operators in detail.	6M
	ii) Write a Python script to check the given string is Palindrome or not.	6M
	OR	
Q.2(B)	i) Explain the features of Python.	6M
	ii) Explain operator precedence and associativity with an example.	6M
Q.3(A)	i) Discuss about break and continue statement with suitable examples	6M
	ii) Explain recursive function with an example.	6M
	OR	
Q.3(B)	Explain in detail about string operations and operators with examples.	12M
Q.4(A)	i) Explain in detail about creation and slicing of lists with example.	6M
	ii) Differentiate between lists and tuples.	6M
	OR	
Q.4(B)	i) Discuss the built in functions of a list in Python.	6M
	ii) Write a python script to add two matrices.	6M
Q.5(A)	Explain various modes to open a file with examples.	12M
	OR	
Q.5(B)	Discuss in detail about standard modules in python	12M

*** END***