Sub Code: 18OE102

Time: 3 hr.   Max.Marks:70

Note: Answer all the following questions. All Questions Carry Equal Marks

UNIT – I

1 a) What are different types of obstacles in chain survey? Describe them with neat sketches?   7 Marks

b) To determine the width of a river ,a chain line PQR was laid across it, the points was at the points Q and R being on two sides of river. From point S, 60m from Q on line QS which 280^0 and 190^0 respectively. If the distance PQ was 32m, determine the distance QR and draw the sketch.   7 Marks

(Or)

2 a) What are the sources of errors in compass?   6 Marks

b) The following bearings were observed in running a closed traverse. At what stations do you suspect local attraction? Find the correct bearings of lines and also compute the included angles.   8 Marks

LINE	FORE BEARING	BACKBEARING
AB	71°05'	250°20'
BC	110°20'	292°35'
CD	161°40'	341°40'
DE	220°50'	40°05'
EA	300°50'	121°10'

UNIT – II

3 a) The following staff readings were observed successively with level, the instrument has been moved forward after the second, fourth and eighth readings: 0.875, 1.235, 2.310, 1.385, 2.930, 3.125, 4.125, 0.120, 1.875, 2.030 and 3.765. The first reading was taken with the staff held upon a benchmark of elevation 132.135m. Enter the readings in level book-form and reduce the levels. Find also the difference in level between the first and the last points. Tabulate the field book and calculate the levels of the points. Use Rise and Fall method.   7 Marks

b) When the reciprocal leveling is done? Describe the method along with a sketch.   7 Marks

(Or)

4 a) In an operation of reciprocal leveling, two points A and B are taken on opposite banks of a river. When the level was set up near A, the staff readings on A and B are 3.235m and 4.250m respectively. When the level was set up near B, the respective staff readings are 2.345m and 3.623m. Find the true difference of level between A and B. What is the RL of B, if RL of A is 132.250?   7 Marks

b) The following consecutive readings were taken with a level and 4m leveling staff on a continuously sloping ground at common intervals of 30m.
0.905(on A), 1.745, 2.345, 3.125, 3.725, 0.545, 1.390, 2.055, 2.955, 3.455, 0.595, 1.015, 1.850, 2.655 and 2.945(on B).
The RL of A was 395.50 m. calculates RLs of different points and find the gradient of line AB.   7 Marks

UNIT – III

5 a) Derive an expression for Simpson's rule for computing area between boundary and chain line.   7 Marks

b) The following are the perpendicular offsets were taken from a chain line to a hedge Calculate area by (1) Trapezoidal rule (2) Simpsons rule   7 Marks

Distance(m) _ 0   5   10   15   20   30   40   50   65

Offset (m) _ 3.40 4.25 2.60 3.70 2.90 1.80 3.20 4.50 3.70

(Or)

6 a) A railway embankment of formation width of 8m and side slope 2:1 is to be constructed. The ground level along the centre line is as follows: 10 Marks

Chainage _ 0   50   100   150   200   250

GL (m) _ 115.75   114.35 116.80   115.20   118.50   118.25

The embankment has a raising gradient of 1 in 100 and the formation level at zero chainage is 115.00. Assuming the ground is level across the centre line, Compute the volume of the earth work.

b) The areas enclosed by the contours in a lake are as follows: 4 Marks

Contour (m) _ 270   275   280   285   290

Area (m^2) _ 2050   8400   16300   24500   31500

Calculate the volume of water between the contours 270m and 290m by:

(i) Trapezoidal formula   and   (ii) Prismoidal rule

UNIT - IV

7 a) Describe the method of setting a circular curve by Rankin's deflection angle method   7 Marks

b) Two tangents intersect at a chainage of 1000m, the deflection angle being 30^0. Calculate all the necessary data for setting out a circular curve of offsets from the chord produces, taking a peg interval of 25m.   7 Marks

(Or)

8 a) Write the procedure to find horizontal and vertical angles using Total station instrument.   7 Marks

b) What are the functions and principles involved in Total station instrument?   7 Marks

UNIT – V

9 a) What are different types of photogrammetry?   7 Marks

b) What is flight planning and stereoscopy?   7 Marks

(Or)

10 a) Explain electro-magnetic spectrum.   7 Marks

b) What are platforms and sensors? Write different types of platforms and sensors?   7 Marks

Q. No	Question	Marks	CO	BL
	UNIT-I			
1	Discuss about script M-file in writing MATLAB program with suitable examples.	**14**	**CO1**	**L1**
	OR			
2	Write short notes on code cells and multiple comment lines.	**14**	**CO1**	**L1**
	UNIT-II			
3	Mention the syntax of function statement and create a user defined function with suitable example	**14**	**CO2**	**L2**
	OR			
4	Explain 'for' loop control flow structure with an example.	**14**	**CO2**	**L3**
	UNIT-III			
5	Write a MATLAB Program to solve the linear set of equations using the Cramer's method. $$x + y + z = 11$$ $$2x - 6y - z = 0$$ $$3x + 4y + 2z = 0$$	**14**	**CO3**	**L4**
	OR			
6	With suitable examples describe the following polynomial functions. a) roots b) conv c) deconv d) polyder e) polyint	**14**	**CO3**	**L3**
	UNIT-IV			
7	Write a MATLAB programs to illustrate the Two-dimensional graphical features such as grid, labels, title, axis, legend etc	**14**	**CO4**	**L3**

	OR			
8	What is meant by interpolation? Describe the various methods of one-dimensional data interpolation.	**14**	**CO4**	**L3**
	UNIT-V			
9	With suitable examples describe the following symbolic functions. a) findsym b) expand c) factor d) simplify e) subs	**14**	**CO1**	**L3**
	OR			
10	Using the symbolic expressions, evaluate the following equations: a) $\int_0^3 (x^2 + 2x + 5)\ dx$ b) $\frac{d}{dx}(2x^3 + 3x + 6)$ c) $\int_0^2 (x^4 + 3x^2 + 10)\ dx$ d) $\frac{d}{dx}(x^3 + 6x^2 + 3)$ e) $\int (x^3 + \exp(x))\ dx$	**14**	**CO1**	**L4**

K.S.R.M COLLEGE OF ENGINEERING, KADAPA(AUTONOMOUS)
III B.Tech VIII semester (R15) Regular Examinations, May 2021
ROBOTICS AND APPLICATIONS IN MANUFACTURING
(OPEN ELECTIVE)
MODEL QUESTION PAPER

Time:3 hrs   **Max Marks: 70**

Answer five questions. Selecting one Question from each unit
All Questions carry equal marks

Unit-I

1. What is automation? Explain basic elements of automation system.

(OR)

2. a) Define senor. Explain common measuring sensor used in automation system.
   b) Briefly describe the three steps of the analog to digital conversion process.

Unit-II

3. What is an NC system? Explain the elements of NC system.

(OR)

4. Explain the various generations of Robotic Languages in detail.

Unit-III

5. Explain the Fundamentals of Manual Assembly lines and its types.

(OR)

6. Explain of Transfer lines with NO Internal storage with suitable example.

Unit-IV

7. Explain work cell control with examples.

(OR)

8. Explain actuators and various types in detail.

Unit –V & VI

9. Illustrate the interpolation used to map points between frames as operator using translation and rotation.

(OR)

10. Explain with suitable example of Robot applications in manufacturing industry.

KSRM COLLEGE OF ENGINEERING, KADAPA
(AUTONOMOUS)
B. TECH. III SEM ECE (R18)
SUB: OVERVIEW OF MICROCONTROLLERS
MODEL PAPER

TIME: 3HRS   **Max. Marks: 70**

Note: Answer any *five* of the following
Choosing *one* from each unit

	UNIT-I	
1.(a)	With neat sketch explain the general block diagram of microcontroller	7M
(b)	What are the different types of microcontrollers	7M
	(OR)	
2.(a)	Explain selection of a microcontroller	7M
(b)	Write the differences between RISC and CISC	7M
	UNIT-II	
3.(a)	Draw The Architecture Of 8051	7M
(b)	Explain Internal RAM Memory Organization	7M
	(OR)	
4.(a)	Write a short note on timers and interrupts of 8051	7M
(b)	Explain Special function registers of 8051	7M
	UNIT-III	
5.(a)	Draw the functional block diagram of of MSP430 microcontroller and explain each block	7M
(b)	Explain memory mapped input and output of MSP430 microcontroller	7M
	(OR)	
6.(a)	Explain central processing unit of MSP430 microcontroller	7M
(b)	Explain clock generator of MSP430 microcontroller	7M
	UNIT-IV	
7.(a)	Write a short note on overview and features of PIC microcontroller	7M
(b)	Explain the Architecture details of PIC 16C6X/7X microcontroller	7M
	(OR)	
8.(a)	Explain i/o ports of PIC microcontroller	7M
(b)	Write a short note on timers and interrupts of PIC microcontroller	7M
	UNIT-V	
9.(a)	Explain ARM design philosophy	7M
(b)	Explain the program status register of ARM microcontroller	7M
	(OR)	
10.(a)	Write a short note on interrupts and vector table of ARM microcontroller	7M
(b)	Explain the instruction pipeline of ARM microcontroller	7M

Time: 3 hrs.   **Max. Marks: 70**

Note: - Answer any **FIVE** questions choosing **ONE** question from each unit.
All questions carry Equal marks.

UNIT-I

1. a) Define Data Structure. Explain in detail Linear and Non Linear data structure? 7M
   b) Explain different types of Linked List and explain the insertion operation with
   example.   7M

(OR)

2. Define Array. Explain any Two operation on arrays with example   14M

UNIT- II

3. a) What is stack? Explain different operations on stack.   10M
   b) Write short notes on Application of Stack.   4M
(OR)
4. a) What is Queue? Explain different types of queues.   7M
   b) Explain the operations on Queue   7M

UNIT-III

5. a) What is Tree? Explain the basic terminology used in trees.   7M
   b) Explain the different ways of representation of tree with an example.   7M
(OR)
6. a) Explain with example the tree traversal algorithms.   7M
    b) Write short notes on Priority queues with heaps as example   7M

UNIT-IV

7. What is Balanced Search Trees? Explain in detail AVL Tree and its operation. 14M

(OR)

8. a) What is Graph? Explain the basic terminology used in Graph.   7M
   b) Explain the different ways of representation of Graph with an example   7M

UNIT –V

9. a) What is Sorting? Explain Bubble Sort technique with an example.   7M
   b) Explain Binary Search with example.   7M
(OR)
10. a) Explain Quick Sort with an example.   10M
    b) Explain Linear Search with example   4M

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA
Model Question Paper
(180E502) DATABASE MANAGEMENT SYSTEMS (OPEN ELECTIVE-1)
B.Tech. VI Semester (CSE) (R18) Degree Examinations

Time: 3 hrs.   **Max. Marks: 70**

Note: - Answer any **FIVE** questions choosing **ONE** question from each unit.
        All questions carry Equal marks.

UNIT-I

1. a) Write about Database users and Administrators   7M
   b) Explain Database system architecture with a neat diagram.   7M

(OR)

2. a) Write and explain the relational operations with an example.   7M
   b) Briefly write about ER model.   7M

UNIT- II

3. a) Write about SQL Data Definition.   7M
   b) Write and explain aggregate functions with an examples.   7M
(OR)
4. a) Write about Triggers. Explain it with an example.   7M
   b) Briefly write about Tuple Relational Calculus.   7M

UNIT-III

5. a) Write about problems caused by Redundancy.   7M
   b) Write about First, Second, BCNF and Third normal forms.   7M
(OR)
6. a) What is Functional dependency? Write about Decompositions.   7M
   b) What is Multi-Valued, Join dependency? Write about Fourth and Fifth normal
      forms.   7M

UNIT-IV

7. Write and explain about Query Processing with a neat sketch.   14M

(OR)

8. a) What is a Transaction? Write about properties of Transaction.   7M
   b) Write about the Transaction Isolations levels.   7M

UNIT –V

9. a) Write about Two-phase locking protocol.   7M
   b) Write about Deadlock handling.   7M
(OR)
10. a) Write about Recovery algorithms.   7M
    b) Write about Remote Backup systems.   7M

K.S.R.M. COLLEGE OF ENGINEERING

(AUTONOMOUS)
Kadapa, Andhra Pradesh, India– 516 003

III B.Tech., VI Semester (R18 UG)
Advanced Numerical methods (Subject Code **180E2601**)
(Open Elective)

Time: 3 Hours	MODEL PAPER	Max. Marks: 70

Note: Answer any **FIVE** questions by choosing ONE from each unit.
  All questions carry equal marks.

Unit - I

1. (a) Find the real root of the equation $3x = \cos x + 1$ by using Newton- Raphson method. (7M)

   (b) Solve the following system of equations by using Gauss-Jordan method:

   x+y+z=9,2x-3y+4z=13,3x+4y5z=40   (7M)

<div align="center">OR</div>

2. Solve the equations $10x - 2y - z - u = 3, -x - y + 10z - 2u = 27 , -x - y - 2z + 10u = -9, -2x + 10y - z - u = 15$ by using Gauss-Seidel iteration method correct to three decimal places.   (14M)

Unit - II

3. (a) Derive the Newton's backward interpolation formula.   (7M)

   (b)Construct Newton's forward interpolation polynomial for the following data and hence find the value of $y \ for \ x = 5$.   (7M)

x	4	6	8	10
y	1	3	8	16

<div align="center">OR</div>

4. Use Lagrange's interpolation formula to find the value of y when $x = 10$, if the following values of $x \ and \ y$ are given.   (14M)

x	5	6	9	11
y	12	13	14	16

Unit – III

5. Find $\frac{dy}{dx} \ and \ \frac{d^2y}{dx^2}$ at $(i)x = 1.5 \ and \ (ii) \ x = 4.0$ for the following data: (14M)

x	1.5	2.0	2.5	3.0	3.5	4.0
y	3.375	7.000	13.625	24.000	38.875	59.000

<div align="center">OR</div>

6. Evaluate $\int_0^6 \frac{dx}{1+x^2}$ by using (i) Trapezoidal rule (ii) Simpson's $\frac{1}{3}$ rule and

   (iii) Simpson's $\frac{3}{8}$ rule.   (14M)

7. (a)Using Euler's modified method, solve $\frac{dy}{dx} = 1 + xy$ $with$ $y(0) = 2$, find y at x=0.1.

(7M)

(b) Using fourth order Runge-Kutta method evaluate the value of y when x=0.1 given that $\frac{dy}{dx} = x^2 - y$, $y(0) = 1$. (7M)

OR

8. Find y(0.8) by Milne's method for the equation $\frac{dy}{dx} = y - x^2$, y(0)=1. Obtain the starting values by Taylor's series method. (14M)

9. solve $\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = 0$ in $0 \le x \le 4, 0 \le y \le 4$ given that u(0,y)=0, u(4,y)=8+2y, u(x,0)=$\frac{x^2}{2}$,u(x,4)= x^2 with $\Delta x = \Delta y = 1$. (14M)

OR

10. Solve the boundary value problem $y^{11} - y = 0$ $with$

$y(0) = 0$ and $y(2) = 3.62686$. The $exact$ $solution$ of $this$ $problem$ is $y = sinhx.$

(14M)

K.S.R.M. COLLEGE OF ENGINEERING: : KADAPA.
(Autonomous)
VI Sem (R18) Model Question paper – JULY 2021
OPEN ELECTIVE- ENGLISH – WRITE IT RIGHT
(Common to all branches)

Time: 3 Hrs.   **Max. Marks: 70**

Note: Answer all <u>FIVE</u> Units. All questions carry equal marks. (5x14 =70)
<u>UNIT-1</u>

1. a) What are the features of effective writing? **(7M)**
   b) What are the punctuation marks in English grammar and what are the uses of comma, colon and semicolon? **(7M)**

OR

2. a) What are the guidelines for persuasive/convincing writing? **(7M)**
   b) How to write a job application letter effectively? **(7M)**

<u>UNIT-2</u>

3. a) Prewriting is a process to generate ideas – comment. **(7M)**
   b) Mention at least three strategies of prewriting process **(7M)**

OR

4. Discuss in detail various patterns of Paragraph Development. **(14M)**

<u>UNIT-3</u>

5. **Identify the errors in the following making necessary correction (14M)**
   a) The cars in the lot looks shabby.
   b) For what you are asking now?
   c) The peasant killed the goose that lay golden eggs who was greedy of becoming rich quickly.
   d) I have come to a final conclusion.
   e)   TV will telecast James analogy on post-COVID situation who is my best friend.
   f)   It is a one billion dollars house he is purchasing.
   g) I will go too if you will go.
   h) He demanded for a reduction in the price.
   i)   He is one of those few whom we trust.
   j)   I should know what is the content of the message.
   k) More you invest, more are your profits.
   l)   The necessities of life are expensive these days.
   m) The Arabian Nights is most popular than any other book.
   n) He was sleeping when I went there.

OR

6. a) What techniques do good writers adopt for improving their trade as writers? **(7M)**

   b) COVID-19 has a great impact on us socially and economically - Discuss **(7M)**

UNIT-4

7. a) List out various situations where we can use Definite Article giving one example
    for each **(7M)**

   b) Write the inspiring quotes of a few notable writers on writing. **(7M)**

OR

8. Why is the English language odd and awkward? **(14M)**

UNIT-5

9. a) Expand ' **Great talkers are never great doers**'. **(7M)**

   b) What are the advantages of Note Making. **(7M)**

OR

10. a) What is precis ? What are its dos and don'ts. **(7M)**

   b) **Attempt a précis of the following passage reducing it to 1/3rd of its length**. **(7M)**

If the old world is dead there are at least faint indications that a new world is getting ready to be born. Most encouraging of all is the increasing concern with the good earth and its bounty. Even if education has not reached the poor, awareness has. Witness the Chipko and Appiko movements where tribals, mainly women hugged their trees to prevent them from being felled. The tribal have now realized that government claims of development only meant money and advantage to some fat men who are far away from tribal area. They no longer want cash compensation for being displaced by dams and mines- They want cash compensation for being displaced by dams and mines- They want land for land. Environmental Activism has already stopped two dams – Silent valley in Kerala and Bedhi dam in Karnataka. Strong protests have also led to litigation against limestone mining in Dehradun. The reports say that nature can never be managed well unless the people closest to it are involved in its management. There is still time to act, however gloomy the scenario may look, otherwise, there is worse to come (174 words)

KSRM COLLEGE OF ENGINEERING, KADAPA
(AUTONOMOUS)
B. TECH. VI SEM OPEN ELECTIVES (R18)
SUB: HUMAN CAPITAL MANAGEMENT
MODEL PAPER

TIME: 3HRS   **Max. Marks: 70**

Note: Answer any *five* of the following
Choosing *one* from each unit

	UNIT-I	
1.(a)	Define HRM and explain its nature and scope.	7M
(b)	Explain in brief about the functions of HRM.	7M
	(OR)	
2.(a)	What are the objectives of HRM?	7M
(b)	Describe the role HR manager in the present scenario.	7M
	UNIT-II	
3.(a)	What o you mean by Job Analysis?Explain the process of job analysis.	7M
(b)	What are the factors affecting job design?	7M
	(OR)	
4.(a)	Job Description vs Job Specification.	7M
(b)	What are the techniques of job design?	7M
	UNIT-III	
5.(a)	What is job evaluation? Explain its advantages and limitations.	7M
(b)	Explain the need and benefits of HRP.	7M
	(OR)	
6.	Explain the process of Human Resource Planning.	14M
	UNIT-IV	
7.(a)	What is Recruitment? What are the sources of recruitment?	7M
(b)	What are the various types of interviews?	7M
	(OR)	
8.	What is Selection? Explain the process of Selection	14M
	UNIT-V	
9.(a)	Define Training. Explain various methods training.	7M
	(OR)	
10.(a)	Explain various steps involved in training process.	7M
(b)	What are the principles and methods evaluating training and development effectiveness.	7M