

Subject code: 20BM2202



**RAJIV GANDHI UNIVERSITY OF KNOWLEDGE TECHNOLOGIES
ONGOLE CAMPUS**

E2 (2018 BATCH) SEM2 MID 1 EXAMINATIONS, MAY 2022

SUBJECT: Introduction to Operation Research

BRANCH: CSE

Time: 2 hrs.

DATE: 16-05-2022 (FN)

Max. 40 Marks

Answer any four questions of the following

4X10=40 Marks

1. What is OR? Discuss briefly its applications. (10 Marks)
2. Discuss the various phases in solving an OR problem. (10 Marks)
3. Solve the following Linear Programming Problem using Graphical method: (10 Marks)

$$\text{Maximize } Z = x_1 + \frac{x_2}{2}$$

$$\text{Subject to: } 3x_1 + 2x_2 \leq 12$$

$$5x_1 \leq 10$$

$$x_1 + x_2 \leq 8$$

$$-x_1 + x_2 \geq 4, x_1, x_2 \geq 0$$

4. Solve the following Linear Programming Problem using Graphical method: (10 Marks)

$$\text{Minimize } Z = 20x_1 + 10x_2$$

$$\text{Subject to: } x_1 + 2x_2 \leq 40$$

$$3x_1 + x_2 \geq 30$$

$$4x_1 + 3x_2 \geq 60$$

$$x_1, x_2 \geq 0$$

5. Solve the following Linear Programming Problem using Simplex method: (10 Marks)

$$\text{Maximize } Z = 3x_1 + 2x_2$$

$$\text{Subject to: } x_1 + x_2 \leq 4$$

$$x_1 - x_2 \leq 2$$

$$x_1, x_2 \geq 0$$

6. Solve the following Linear Programming Problem using Simplex method: (10 Marks)

$$\text{Minimize } Z = 2x_1 - 3x_2 + 6x_3$$

$$\text{Subject to: } 3x_1 - x_2 + 2x_3 \leq 7$$

$$2x_1 + 4x_2 \geq -12$$

$$-4x_1 + 3x_2 + 8x_3 \leq 10$$

$$x_1, x_2 \& x_3 \geq 0$$

7. Solve the following Linear programming problem by Big – M method. (10 Marks)

$$\text{Maximize } Z = x_1 + 2x_2 + 3x_3 - x_4,$$

Subjected to

$$x_1 + 2x_2 + 3x_3 = 15,$$

$$2x_1 + x_2 + 5x_3 = 20,$$

$$x_1 + 2x_2 + x_3 + x_4 = 10,$$

$$x_1, x_2, x_3, x_4 \geq 0$$

8. Solve the following Linear Programming Problem using Big M method: (10 Marks)

$$\text{Minimize } Z = 7x_1 + 15x_2 + 20x_3$$

$$\text{Subject to: } 2x_1 + 4x_2 + 6x_3 \geq 24$$

$$3x_1 + 9x_2 + 6x_3 \geq 30$$

$$x_1, x_2 \& x_3 \geq 0$$

Subject code: CS2201



**RAJIV GANDHI UNIVERSITY OF KNOWLEDGE TECHNOLOGIES
ONGOLE CAMPUS**

E2 (2018 BATCH) SEM2 MID 1 EXAMINATIONS, MAY 2022

SUBJECT:COA

Time : 2hrs

DATE: 16-05-2022(AN)

BRANCH: CSE

Max. 40 Marks

Section-A

1. What is computer architecture and Explain it with the detailed diagram.
 2. What is an instruction? Describe the instruction execution life cycle in detail.
 3. What is number system? Discuss various types of it.
 4. What is microprocessor? Explain the 8086 architecture.
 5. What is a register? Explain RTL in detail.
 6. What is RISC and CISC. Expalin in detail.
 7. Explain all the registers in BIU and EU and Flags present in micro processor.
 8. Discuss the fixed point and floating point representation in detail with the example.
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**RAJIV GANDHI UNIVERSITY OF KNOWLEDGE TECHNOLOGIES
ONGOLE CAMPUS**

E2 (2018 BATCH) SEM2 MID 1 EXAMINATIONS, MAY -2022

SUBJECT:DATA SCIENCE WITH PYTHON

Time : 2hrs

BRANCH:CSE

**DATE: 17-05-2022(FN)
Max. 40 Marks**

Subject code: 20CS2202

Section-A

Answer any four Questions

4X10=40 M

- 1) a) Explain any five Data types in python in detail?
b) Define string ? Explain string indexing & slicing in detail?
- 2) Define ,create & write operations on
 - a) List b) Tuple c) Set d) Dictionary
- 3) a) write python code to check whether the given number is strong or not using for& while loops
b) Define function? Write python code to check given number is even or odd by returning value to the function?
- 4) Define class & object ? Write python code to create a class &object and also write code to access variables & functions from class ?
- 5) Explain all file operation(write ,read ,append) & access modes ? Implement python code it ?
- 6) Using Numpy write python code for the following
 - a) Creation of NumPy Arrays from List b) Attributes of NumPy Array
 - c) Different Ways of Creating NumPy Arrays d) Indexing & slicing on Arrays using Numpy
 - e) Reshaping Arrays
- 7) For the below Writre python code to create Series & Data frames using pandas ?
a) values b) Numpy array c) Dictionaries
- 8) a) write a python code to import CSV Data set Using pandas?
b) write python code by using pandas to perform Operations on rows and columns in Data Frames?

Subject code: 20CS2202

SUBJECT CODE: 20CS2203



**Rajiv Gandhi University of Knowledge Technologies - AP
ONGOLE CAMPUS**

E2 (2018 BATCH) SEM1 MID-I EXAMINATIONS

SUBJECT: Web Technology

DATE: 17.05.2022(AN)

TIME : 2hrs

BRANCH: CSE

Max. 40Marks

Instructions: Answer any four of the Following Questions $4 \times 10 = 40M$

1. Define HTML, Write the history of HTML and also describe the advantages and Disadvantages of HTML [10 M]
2. Explain in detail about default HTML page structure and Layout with an example HTML program. [10 M]
3. Write an HTML program in a proper structure, which includes any 15 elements along with all types of comments. [10 M]
4. Define form and Frame? Write a program to create a HTML form which includes all the HTML form controls. [10 M]
5. Define CSS, describe the advantages of CSS and explain any 5 CSS selectors with an example program. [10 M]
6. Write a 3 different meaning full HTML programs which including Inline CSS, Internal CSS and External CSS by using different CSS properties. [10 M]
7. Design your simple resume by using HTML and CSS. [10 M]
8. Define a Variable? Write the rules for declaring a variable and write all the looping statements with syntax. [10 M]

Subject code: 20CS2204



**RAJIV GANDHI UNIVERSITY OF KNOWLEDGE TECHNOLOGIES
ONGOLE CAMPUS**

E2 (2018 BATCH) SEM 2 MID 1 EXAMINATIONS, MAY 2022

SUBJECT: Compiler Design

Time : 2hrs

DATE: 18-05-2022(FN)

BRANCH: CSE

Max. 40 Marks

Section-A

Answer any four Questions

4X10=40 M

1. (a) Explain in detail about phases of complier? [5M]
 (b) Write a short notes on compliers. [5M]
2. (a) Write about the lex tool [3M]
 (b) Count the number of tokens in a given program. [4M]


```
main()
{
    Int a,b,c;
    a=5,b=8;
    c=a+b;
    Printf("the value of c :");
}
```

 (c) Write a short notes on lexical analyzer. [3M]
3. How many type of input buffers are there. Explain about input buffering by taking an example of instruction. [10M]
4. How many types of tokens are there. List out few of them. [10M]
5. (a) Why we call lexical analyzer as tokeniser justify the statement by using the example. [5M]
 (b) Define the Four functionalities of lexical analyzer phase. [5M]
6. (a) Write a short notes of top-down parsers. [5M]
 (b) Derive the first{} and follow{} set for the given productions [5M]


```
S-> ABCDEFGHIJ
A->b/ε
B->d/ε
C->a/ε
D->e/ε
E->c/ε
F->f/ε
G->g
H-> h/ε
I-> i
J ->j
```
7. a) Explain about the LL(1) parsers. [5M]
 b) write a short notes about parsers. [5M]
8. What are the roles of the syntax analyzer phase. [10M]

Subject code: 20BM 2202

RAJIV GANDHI UNIVERSITY OF KNOWLEDGE AND TECHNOLOGIES
ONGOLE CAMPUS

E2 (2018 BATCH) SEM2 MID 2 EXAMINATIONS, JULY 2022

SUBJECT: Introduction to Operations Research

Time: 2hrs

DATE: 21-07-2022(FN)

BRANCH: CSE

Max. 40 Marks

Section-A

Answer any four questions of the following

4X10=40 Marks

1. Find the optimum solution for the following transportation problem by Stepping stone method.

	A	B	C	D	Supply
1	4	6	8	8	40
2	6	8	6	7	60
3	5	7	6	8	50
Demand	20	30	50	50	

2. The captain of a cricket team has to allot five middle batting positions to five batsmen. The average runs scored by each batsman at these positions are as follows: (10 Marks)

	1	2	3	4	5
P	40	40	35	25	50
Q	42	30	16	25	27
R	50	48	40	60	50
S	20	19	20	18	25
T	58	60	59	55	53

Find the assignment of batsmen to positions which would give maximum number of runs.

3. Find the optimum solution for the following transportation cost problem.

	1	2	3	Supply
A	2	7	4	50
B	3	3	7	70
C	5	4	1	80
D	1	6	2	140
Demand	70	90	180	

4. A company has a five job to be done by 5 workers each worker has assigned to one and only one job. Number of hours each worker takes to complete a job is given with

	1	2	3	4	5
P	28	27	24	35	38
Q	26	24	23	32	39
R	18	20	22	30	32
S	27	30	25	24	27
T	29	31	28	40	36

5. A company has factories at four different places, which supply warehouses A, B, C, D and E. Monthly factory capacities are 200, 175, 150 and 325 units respectively. Monthly warehouse requirements are 110, 90, 120, 230, and 160 units respectively. Unit shipping costs are given in the following table. The costs are in rupees

To From	A	B	C	D	E
1	13	-	31	8	20
2	14	9	17	6	10
3	25	11	12	17	15
4	10	21	13	-	17

Shipment from I to B and from 4 to D is not possible. Determine the optimum solution by VAM method to minimize shipping costs.

6. A company has four territories open and four salesmen available for assignment. The territories are not equally rich in their sales potential. It is estimated that a typical salesman operating in each territory would bring in the following annual sales:

Territory I II III IV

Annual sales (Rs.) 60,000 50,000 40,000 30,000

The four salesmen are also considered to differ in ability; it is estimated that working under the same conditions, their yearly sales would be proportionately as follows:

Salesman A B C D

Proportion 7 5 5 4

If the criterion is maximum expected total sales, the

best salesman to the richest territory, the next best salesman to

Briefly explain the classification of Queuing models

7. Briefly explain the classification of Queuing models (10)

Marks)

8. Workers come to tool store room to receive special tools (required by them) for accomplishing a particular project assigned to them. The average time between two arrivals is 60 seconds and the arrivals are assumed to be in Poisson distribution. The average service time (of the tool room attendant) is 40 seconds. Determine (10 Marks)

- a. Average queue length

- b. Average number of workers in the system

- c. Mean waiting time of an arrival

- d. Probability that the tool room attendant remains idle.



**RAJIV GANDHI UNIVERSITY OF KNOWLEDGE AND TECHNOLOGIES
ONGOLE CAMPUS**

E2 (2018 BATCH) SEM2 MID 2 EXAMINATIONS, JULY 2022

SUBJECT: Computer Organization and Architecture
Time: 2hrs

BRANCH: CSE

Subject code: CS2281

DATE: 21-07-2022(AN)
Max. 40 Marks

Answer any four questions of the following

4X10=40 Marks

1. Explain CPU design with a neat sketch in detail.
2. What is micro instruction? Explain complete execution of an instruction with an example.
3. Explain hardwired and micro programmed control unit in detail with an example.
4. What is memory management? Explain one of the memory management techniques in detail.
5. What is page replacement? Find the Page hit ratio and page miss ratio with frame size 3 on the following reference string 7 0 2 0 3 0 4 2 3 0 3 2 2 0 7 0 using all the page replacement algorithms.
6. What is Cache Memory? Explain all the mapping techniques associated with it.
7. What is I/O module? Explain programmed I/O in detail.
8. What is DMA? Explain it in detail with a neat sketch.

Subject code: 20CS 2202


**RAJIV GANDHI UNIVERSITY OF KNOWLEDGE AND TECHNOLOGIES
ONGOLE CAMPUS**
E2(2018 BATCH) SEM2 MID 2 EXAMINATIONS, JULY 2022**SUBJECT: Data Science with Python****DATE: 22-07-2022(FN)****Time: 2hrs****BRANCH: Computer Science & Engineering****Max. 40 Marks****4X10=40 Marks****Answer any four questions of the following**

- 1.** what is web scraping ? Explain the process of web scraping by implementing a python code

- 2.** Perform ANOVA Test on the following data & Also write python code

Two types of fertilizers are used on three groups of plants for 5 weeks. Check if there is a difference in the mean growth of each group. Using the data given below apply a one way ANOVA test at 0.05 significant level.

{F-distribution value ($\alpha=0.05$):7.71}

Fertilizer 1	Fertilizer 2
6	8
8	12
4	9

- 3.** Define Correlation ? Calculate Correlation-coefficient for the following data & also implement python code for the same data?

X: [7,8,4,2,1] y: [1,4,5,7,6]

- 4.** Explain the concept of Simple linear Regression with a python code

- 5.** For the Below data using Linear Regression Calculate intercept(B_0) & slope (B_1) values ,draw best fit line

X: [2,4,6,8,10] y: [5,2,4,1] predict (y^1) for the value :7

- 6.** Explain the concept of polynomial Regression by implementing python code

- 7.** Explain & Implement Python code for the Following Data Visualization using matplotlib

a) Line Plots b) Scatter Plots c) Bubble Plots

- 8.** Explain & Implement Python code for the Following Data Visualization using matplotlib

a) Box Plots b) Bar Charts c) Pie Charts



**Rajiv Gandhi University of Knowledge Technologies - AP
ONGOLE CAMPUS**

SUBJECT CODE: 20CS2203
Subject Code: 20CS2203

E2 (2018 BATCH) SEM2 MID 2 EXAMINATIONS, JULY 2022

SUBJECT: Web Technology
BRANCH: CSE

DATE: 22.07.2022
Max. 40Marks

Answer any four of the Following Questions

4X10=40M

1. Define PHP, with syntax. Write the difference between echo and print statement with example.
2. Difference between POST and GET statement with simple program.
3. Explain in detail about `$_SERVER` and `$_SESSION` variable with simple example program
4. Explain about PHP file handling functions and also differentiate `Include()` and `require()` function.
5. Write the Query for creating Database and table and also write any five syntax of SQL query operations.
6. Design a registration form using HTML and PHP with database connection.
7. Design a simple Home Page using bootstrap with includes navigation bar and containers.
8. Explain in detail about grid system and their rules with proper example.

Subject code: 20CS2204



RAJIV GANDHI UNIVERSITY OF KNOWLEDGE AND TECHNOLOGIES

ONGOLE CAMPUS

E2 (2018 BATCH) SEM2 MID 2 EXAMINATIONS, JULY 2022

SUBJECT: COMPILER DESIGN

DATE: 23-07-2022(FN)

Time: 2hrs

BRANCH: CSE

Max. 40 Marks

Answer any four questions of the following**4X10=40 Marks**

1. Define DAG. What are the applications of DAG. Write the sequence of instructions for the expression given and draw a DAG for it $a+a^*(b-c)+(b-c)^*d$

2. a) Explain about synthesized and inherited attributes
b) write a short notes on CLR(1) & SLR(1) Parsing techniques

3. Write a short notes on Shift Reduce parsing and also check whether the given string is accepted or not
Input string: id1+id2*id3+id4

E-> E+E
E-> E*E
E-> (E)
E-> id

4. Show the following grammar using LR(1) items. And recognise whether they belongs to LALR(1) or not
S->Aa/bAc/Bc/bBa

A->d
B->d

5. Construct a syntax directed translation scheme that translates attributes expression from infix to postfix notation by taking an example

6. a) write a short notes on intermediate languages with examples
b) name the techniques in loop optimization

7. How backpatching can be used to generate code for Boolean expressions and flow of control statements

8. Discuss about the following
a) Common sub expression elimination
b) copy propagation
c) code motion and
d) Constant folding