[Total No. of Questions: 5] **SEAT No. :**

First Year B.C.A.
CA – 151 - T: Advanced C Programming
(2024 Pattern) (Semester -II)

[Time: 2 Hours] **[Max. Marks: 35]**

Instructions to the candidates:

1) All questions are compulsory.

2) Figures to right indicate marks.

Q.1) Answer the following: (Any four) **[4x2=8 M]**

a) What is preprocessor?

b) What is pointer?

c) Enlist predefined function in string?

d) What is file handling?

e) What is structure?

f) What is string?

Q.2) Answer the following: (Any two) **[2x4=8 M]**

a) Difference between Macro and function

b) Explain Dynamic memory management(DMA)

c) Explain array of structure with example

Q.3) Answer the following: (Any two) **[2x4=8 M]**

a) Write a c program calculate Armstrong number using pointer

b) Write a c program reverse string using (strrev) function

c) Write a c program display customer details customer-id, Customer-name, Customer-marks using function and display it

[P.T.O]

Q.4) Answer the following: (Any two) **[2x4=8 M]**

a) Explain Library function for file handling

b Write a c program text file write and read file using file handling

c) Write a c program concate of string using (strcat) function

Q.5) Write a short note: (Any one) **[1x3=3 M]**

a) Explain format of preprocessor directives

b) Explain Nested Structure

[Total No. of Questions: 5] **SEAT No. :** ____

First Year B.C.A.
CA – 153 – T : Introduction to Microcontrollers
(2024 Pattern) (Semester -II)

[Time: 2 Hours] **[Max. Marks: 35]**

Instructions to the candidates:

1) All questions are compulsory.

2) Figures to right indicate marks.

Q.1) Answer the following: (Any four) **[4x2=8 M]**

a) What is Microcontroller?

b) What is Assembler?

c) What is Timer?

d) What is Interrupt?

e) What is PSW Register?

f) Explain any 4 features of microcontroller?

Q.2) Answer the following: (Any two) **[2x4=8 M]**

a) Explain TMOD Register in detail.

b) Explain Instruction classification in detail.

c) What is difference between Microcontroller and Microprocessor?

Q.3) Answer the following: (Any two) **[2x4=8 M]**

a) What is Addressing mode? Explain any three.

b) Explain Block diagram of Microcontroller in detail.

c) Explain the interfacing with stepper motor.

[P.T.O]

Q.4) Answer the following: (Any two) **[2x4=8 M]**

a) What are different type of microcontroller explain in brief.

b) What is instruction set? Explain the types of instruction set in 8051 Microcontroller. (Any three)

c) Explain Timer Modes in detail.

Q.5) Write a short note: (Any one) **[1x3=3 M]**

a) Interrupt Priority register.

b) Application of Microcontroller.

[Total No. of Questions: 5] **SEAT No. :** ____

First Year B.C.A.
CA-155-T : Linear Algebra
(2024 Pattern) (Semester -II)

[Time: 2 Hours] **[Max. Marks: 35]**

Instructions to the candidates:

1) All questions are compulsory.

2) Figures to right indicate marks.

Q.1) Answer the following: (Any four) **[4x2=8 M]**

a) What is matrix?

b) What is the Zero Vector ?

c) What is the row echelon form of a matrix?

d) What is a vector space?

e) What is a subspace?

f) What is the null space of a matrix?

Q.2) Answer the following: (Any two) **[2x4=8 M]**

a) Define the row space and column space of a matrix.

b) Define the Rank of a Matrix.

c) Define eigenvalue and eigenvector of a matrix. Give one example.

Q.3) Answer the following: (Any two) **[2x4=8 M]**

a) What is the row echelon form of a matrix? Give an example.

b) Write any 3 properties of Rank of Matix.

c) Define Equivalent Matrices.

Q.4) Answer the following: (Any two) **[2x4=8 M]**

a) What is a subspace? Give one example of a subspace of R3

b) Test the Following system for consistency & solve it (use Gauss Elimination Method)

$x+y+z = 6$

$2x+y+3z = 13$

$5x+2y+z = 12$

c) Evaluate the rank of matrix: $\begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & 4 \\ 0 & 2 & 2 \end{bmatrix}$

Q.5) Write a short note: (Any One) **[1x3=3 M]**

a) Rank

b) Nullity

[Total No. of Questions: 5] **SEAT No. :** ☐

First Year B.C.A.
AEC-101-: Professional Communication Skills
(2024 Pattern) (Semester -II)

[Time: 2 Hours] **[Max. Marks: 35]**

Instructions to the candidates:

1) All questions are compulsory.

2) Figures to right indicate marks.

Q.1) Answer the following: (Any four) **[4x2=8 M]**

a) Explain with examples different ways of communicating of the following:

i Answering requests and instructions

ii. First time introduction

b) Discuss the principles of drafting a report.

c) How does noise disturb the communication process?

d) Differentiate between good and bad business letters?

e) Discuss qualities of a good report writing?

f) Define the term 'enclosures'?

Q.2) Answer the following: (Any two) **[2x4=8 M]**

a) What is a circular? Explain the need for it?

b) Write a sales letter to promote the sale of a smart phone?

c) Discuss in detail any two types of Interviews?

Q.3) Answer the following: (Any two) **[2x4=8 M]**

a) Explain the various techniques of effective public speaking?

b) What are challenges of group decision-making? How can one overcome these challenges?

c) State and explain merits and limitations of Written Communication?

[P.T.O]

Q.4) Answer the following: (Any two) **[2x4=8 M]**

a) What is the main purpose of circular letters?

b) What is art of listening? Explain the principles of good at listening.

c) Explain the purpose and importance of (i) E-mail and (ii) Voice-mail.

Q.5) Write a short note: (Any one) **[1x3=3 M]**

a)"Communication is the life blood of business."

b)Explain it and discuss why communication is so important to an Organization?

c)What are the causes for liking written communication?

[Total No. of Questions: 5] **SEAT No. :**

First Year B.C.A.
VEC-151-T: Environmental Science-II
(2024 Pattern) (Semester -II)

[Time: 2 Hours] **[Max. Marks: 35]**

Instructions to the candidates:

1) All questions are compulsory.

2) Figures to right indicate marks.

Q.1) Answer the following: (Any four) **[4x2=8 M]**

a) Define environmental pollution.

b) Name any two global organizations that support climate adaptation efforts.

c) Define environmental management.

d) What is the main aim of the Convention on Biological Diversity (CBD)**?**

e) List two effects of noise pollution on human health.

f) Name two tools used in environmental management systems (EMS).

Q.2) Answer the following: (Any two) **[2x4=8 M]**

a) Explain any two international agreements aimed at climate change mitigation?

b) Describe the causes and health effects of air pollution.

c) Explain environmental legislations on the forest?

Q.3) Answer the following: (Any two) **[2x4=8 M]**

a) What is Pollution Control? And Pollution Management Strategies.

b) What is binding and non-binding measures?

c) What is solid waste management?

[P.T.O]

Q.4) Answer the following: (Any two) **[2x4=8 M]**

a) Explain Major International organizations and initiatives.

b) What is Waste Management? And Explain 3R Principle.

c) Difference between Green House Gas (GHG) reduction vs. sink enhancement.

Q.5) Write a short note: (Any one) **[1x3=3 M]**

a) Thermal and Radioactive pollution.

b) The Environment (Protection) Act, 1986.