Your Roll No.............

Sr. No. of Question Paper : 1315   G

Unique Paper Code   : 6332491101

Name of the Paper   : Computer Fundamentals

Name of the Course   : B.Voc.

Semester   : I

Duration : 3 Hours   Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. The paper has **two** sections.

3. **Section A** is compulsory.

4. Attempt any **four** questions from **Section B**.

Section A

1. (i) Convert the following :   (3)

    (a) $(485)_{10} = (\ )_2$

    (b) $(567)_8 = (\ )_2$

    (c) $(11000111)_2 = (\ )_{10}$

    (ii) Briefly explain loader and linker.   (3)

P.T.O.

(iii) What are microcomputers, mainframe computers and supercomputers? (3)

(iv) List the features of second and third generation computers. (3)

(v) Describe Sequential Memory Access and Direct Memory Access. (3)

(vi) What are the applications of computer in entertainment industry? (3)

(vi) Define a cache hit and cache miss with help of example. (3)

(viii) Give the full form of following : (3)

(a) BIOS

(b) OMR

(c) MICR

(ix) Explain Unicode Code. (3)

Arrange following in ascending order based on their Unicode Codes:

Mango, Apple, Banana, Grape, Kiwi, Blueberry, Melon

(x) Classify the following as input or Output devices. Justify your answer : (3)

(a) Digital camera

(b) USB drive

(c) Plotter

Section B

2. (a) Differentiate between the following (**two** differences each) : (5)

    (i) SRAM and DRAM

    (ii) Inkjet Printer and Laser Printer

    (b) Perform the following operations : (2+3)

    (i) Add $(101100111)_2$ and $(1000101001)_2$

    (ii) Subtract $(10101111)_2$ from $(10010111)_2$. Using 1's Complement

    (c) Explain briefly two pick and two pointing devices? Illustrate using an example of each. (5)

3. (a) Draw a block diagram to illustrate the basic organization of a computer system and explain the functionalities of all the components shown in the block diagram. (5)

    (b) Briefly explain any four types of Scanners. (5)

    (c) Illustrate the hierarchy of different memory types with the help of a diagram based on cost, access speed and storage capacity. What is the use of secondary memory? (5)

P.T.O.

4. (a) What is Operating System? Explain any four functions of an Operating System. (5)

(b) What is a volatile and non-volatile memory? Explain with help of example. What is the use of the Device driver in computer? (3+2)

(c) Differentiate between multiprocessing and multiprocessor operating systems. Why are inputs and output devices necessary for a computer system? (5)

5. (a) What is the need of a port in a computer? List any four ports that may be used in a computer also give the name of one device that may use that port. (5)

(b) Explain the role of a translator program. How is a compiler different than an interpreter? List any two high level languages that use a Compiler. (5)

(c) What is a motherboard? List and briefly explain any five parts of a motherboard. Describe the different kinds of computer monitors. (3+2)

6. Write short notes on (Any Two) : (5×3)

(i) Cloud Computing

(ii) Embedded Systems

(iii) Data Mining

(500)

[This question paper contains 4 printed pages.]

Your Roll No...............

Sr. No. of Question Paper : 1330   G

Unique Paper Code   : 6332491103

Name of the Paper   : Fundamentals of Mathematics

Name of the Course   : B.Voc. (Web Designing)

Semester   : I

Duration : 3 Hours   Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Attempt any **five** questions.

1. Do the following parts :   (9×2)

    (a) Find the open interval on which $f(x) = 3x^2 - 6x$ is concave up and where it is concave down. Also determine points of inflection, if any.

P.T.O.

(b) Discuss the derivability of the function :

$$f(x) = \begin{cases} 2x - 3, & 0 \le x \le 2 \\ x^2 - 3, & \text{if } 2 < x \le 4 \end{cases}$$

at $x = 2$.

2. Do the following parts : (9×2)

(a) Let $A = \begin{pmatrix} 1 & 2 \\ 3 & -2 \end{pmatrix}$ and $B = \begin{pmatrix} 1 & -1 \\ 2 & 3 \end{pmatrix}$, Compute $(AB)^2$.

(b) Use Cramer's rule to solve the system :

$3x_1 + x_2 - 2x_3 - 1 = 0$

$4x_1 - 10x_3 - 7 = 0$

$2x_1 - 3x_2 + 5x_3 - 18 = 0.$

3. Do the following parts : (9×2)

(a) Show that : $\lim_{x \to 0^-} e^{\frac{1}{x}} = 0$ and establish that $\lim_{x \to 0^+} e^{\frac{1}{x}}$ does not exist in R.

(b) Let $f(x) = 3x^3 - x$,

    (i) Is f one to one?

    (ii) Is f onto?

    Justify each answer.

4. Do the following parts : (9×2)

(a) Examine the existence of the limit of the function:

$$f(x) = \begin{cases} t-2 & \text{if } t<0 \\ t^2 & \text{if } 0 \le t \le 2 \\ 2t & \text{if } t>t \end{cases}$$

at $t = 0,1$.

(b) Find the relative extrema of $f(x) = 3x^5 - 5x^3$.

5. Do the following parts : (9×2)

(a) Evaluate $\int_0^3 f(x)\,dx$ if

$$f(x) = \begin{cases} x^2, & x<2 \\ 3x-2, & x \ge 2 \end{cases}$$

(b) Find the intervals in which $f(x) = x^3 - 3x^2 - 9x$ is increasing and the intervals on which f is decreasing.

6. Do the following parts : (9×2)

(a) Find the inverse of a relation R represented by

$\{(-15, -4), (-18, -8), (-6, 2), (-12, 5), (5, 3)\}$. And write the domain and range of R^{-1}.

P.T.O.

(b) Let us assume that F is a relation on set R real numbers define by xFy if and only if x − y is an integer. Prove that F is an equivalence relation on R.

7. Do the following parts : (9×2)

(a) Find a value of the constant k, if possible, that will make the function continuous everywhere.

$$f(x) = \begin{cases} 7x - 2, & x \leq 1 \\ kx^2, & x > 1 \end{cases}$$

(b) Let $A = \begin{pmatrix} 1 & 2 & x \\ 3 & -1 & 2 \end{pmatrix}$ and $B = \begin{pmatrix} y \\ x \\ 1 \end{pmatrix}$. If $AB = \begin{pmatrix} 6 \\ 8 \end{pmatrix}$,

find x and y.

[This question paper contains 4 printed pages.]

Your Roll No...............

Sr. No. of Question Paper : 1310   G

Unique Paper Code   : 6332492302

Name of the Paper   : Programming with Java

Name of the Course   : **B.Voc. (Web Designing)**

Semester   : III

Duration : 3 Hours   Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Question No. **1** is compulsory in **Section-A**.

3. Attempt any **four** questions from **Section-B**.

4. Parts of a question should be attempted together.

Section A

1. (a) Define class and object with suitable example.

                                              (3)

P.T.O.

(b) What is output / Error of the following code (3)

```
public class Main
{
    public static void gfg(String s)
    {
        System.out.println("String");
    }
    public static void gfg(Object o)
    {
        System.out.println("Object");
    }
    public static void main(String args[])
    {
        gfg(null);
    }
}
```

(c) Discuss any two object oriented feature of Java language. (3)

(d) Discuss the use of the ?: (conditional or ternary) operator in Java with suitable example. (3)

(e) What is the purpose of Anonymous block in java? (3)

(f) Why we use notify() method in thread. (3)

(g) Distinguish between 'error' and 'exception' in the context of Java programming. (3)

(h) Define the term 'Polymorphism' with suitable example. (3)

(i) Differentiate between static variable and local variable in java. (3)

(j) What do you mean by thread priority in java.
(3)

Section B

2. (a) Explain the difference between primitive data types and non-primitive data types in Java. Provide examples of each. (7)

(b) Write a Java program that calculates the sum of two matrices, each of size mxn. The program should enable user to input values for these matrices.
(8)

3. (a) Define method overloading in the context of Java programming and provide an example to demonstrate how it works. (7)

(b) Why do we use constructors in Java? Explain parameterized constructor with suitable example.
(8)

4. (a) Differentiate between static and dynamic binding in java with suitable example of each. (7)

P.T.O.

(b) Differentiate between abstract class and interface in java. Which one provide 100% abstraction in java? (8)

5. (a) Discuss the use of the 'try', 'catch', and 'finally' blocks in exception handling with a suitable example. (7)

(b) Explain the concept of exception handling in Java. Discuss different types of exceptions encountered in Java programming. (8)

6. (a) Write short notes on any two of the following multithreading methods : (7)

  (i) yield method

  (ii) sleep method

  (iii) stop method

(b) Discuss synchronization in multithreading. What is a race condition in the context of multithreading? (8)

7. (a) Write a java program to find sum of following series. (7)

$$1^1 + 2^2 + 3^3 + \ldots\ldots\ldots n^n$$

(b) What is a byte stream in Java I/O, and how does it differ from character streams in terms of handling data? (8)

(200)

[This question paper contains 8 printed pages.]

Your Roll No................

Sr. No. of Question Paper : 1325

G

Unique Paper Code : 6332492303

Name of the Paper : Data Analysis using Python

Name of the Course : B.Voc. (Web Designing)

Semester : III

Duration : 3 Hours   Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. The paper has **two** sections. **Section A** is compulsory.

3. Attempt any **four** questions from **Section B**.

Section A

1.   (i) What are the different data structures in Pandas?

P.T.O.

(ii) Write a Python program to generate n random numbers from the range between 11 and 30?

(iii) Write a short note on the usage of the pip command in Python.

(iv) What is normalization? Why is it used?

(v) Write a Python program to insert an element into the given sorted list.

(vi) Which command is used to identify the missing values in the data frame? What are the different ways to handle the missing values in the data frame?

(vii) What are the different ways to create a dataframe in the Pandas Python library?

(viii) What is the difference between tuple and list in Python?

(ix) Write the Python command to display the dimension of the Numpy array and display the total number of rows and columns of the Pandas dataframe.

(x) Consider the 3-dimensional array: Arr3d = [[1,2,3],[4,5,6],[7,8,9]]. Write the slicing command in Python to have the output as [8,9] and [5] from the given Arr3d.

Section B

2. (i) What is Matplotlib? Write the two main purposes of the Matplotlib Python library. What are the different types of graphs in Matplotlib? Write a Python program to plot a Histogram by assuming your own data and explain the various attributes of a Histogram.

(6)

(ii) Write the difference between a Histogram and a Bar chart.

(4)

(iii) Describe the steps involved in the process of Data Analysis.

(5)

3. (i) Write a Python program to check for the presence of a key in the dictionary and print the sum of all its values.

(7)

(ii) Write a Python program to get the input from the user through a prompt message for a score between 0.0 and 1.0. If the score is out of the range, print a error message. If the score is between 0.0 and 1.0, print a grade according to the given table.

(8)

Score	Grade
>=0.9	A
>=0.8	B
>=0.7	C
<0.7	F

4.   (i) Write the Python command to compute the correlation of column A with column B in the dataframe namely df.   (3)

(ii) Write the Python command to sort the df dataframe in descending order of column A. Write the Python command to sort the df dataframe in ascending order of column B.

                                                             (3)

(iii) Write the Python command to calculate the maximum of column A of the df dataframe.

                                                             (3)

(iv) Write the Python command to display the cube of column C of the df dataframe.   (3)

(v) Write the Python command to replace the value 6 with 3 and 7 with 4 in column C of the df dataframe.   (3)

5. (i) Write a Python program to compute the mean, standard deviation, and variance of a given array along with the second axis.

                                                            (7)

Sample output :

Original Array : [0 1 2 3 4 5]

Mean : 2.5

Std : 1

Variance : 2.9166666666666665

(ii) Write a Python program to plot heatmap using matplotlib?   (4)

(iii) What is the Pearson Correlation Coefficient? What is the possible range of values obtained in correlation and how is it interpreted?   (4)

6. (i) Write a Python program to plot the algebraic equation : 10x+14.   (4)

(ii) Write a note on multiple subplots with suitable examples. (4)

(ii) Write a user-defined function f indname (name) where name is an argument in Python to delete a phone number from a dictionary phonebook on the basis of the name, where name is the key. (7)

7. (i) Explain the standard deviation and interquartile range. Write a Python program to display the standard deviation and interquartile range.

(4)

(ii) What is Linear Regression? What are the assumptions of the Linear Regression? (4)

(iii) What is cross tabulation? Write a Python program to use cross tabulation in Pandas and create Bar chart. (4)

(iv) What is an outlier? Which graph helps us to identify the outlier? (3)

[This question paper contains 2 printed pages.]

Sr. No. of Question Paper : 7564

Unique Paper Code   : 61018314

Name of the Paper   : (GEC-3.3) – Life Skills
Education

Name of the Course   : B.VOC. (CBCS) 2023

Semester   : III

Duration   : 3 Hours

Maximum Marks   : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt
of this question paper.

2. Attempt **any five** questions.

3. **All** questions carry equal marks.

1. "Time management is a skill that can be learned and
perfected." Elaborate this statement.

P.T.O.

2. To succeed in life, it is important to convert our negative emotions and thoughts into opportunities for learning and growth. Illustrate with examples.

3. Communication can be more effective by employing different components of the skill of communication appropriately. Discuss

4. "Development of empathy can help lay groundwork for the growth of other positive traits, including skill in reasoning and communication, inter-personal skills, etc." Substantiate this statement.

5. What are the evaluation tools used in evaluating a life skill education programme?

6. Problem Solving requires critical thinking. Write the important steps involved to critical thinking.

(100)

[This question paper contains 4 printed pages.]

Your Roll No...............

Sr. No. of Question Paper : **7567**

Unique Paper Code   : 61018527

Name of the Paper   : E-Commerce (GEC-5.1)

Name of the Course   : **B.Voc. (Web Designing) (CBCS), 2023**

Semester   : V

Duration   : 3 Hours

Maximum Marks   : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. **Section A** is compulsory.

3. Attempt **any five** questions form Section B.

Section A

1. (a) Give any two applications of e commerce.   (2)

P.T.O.

(b) Differentiate between E-commerce and E-business.

(2)

(c) What do you understand by EDI?

(2)

(d) What is digital currencies?

(2)

(e) How can the risk involved in online payment may be reduced by Internet governance?

(3)

(f) What are the E-Commerce Security Threats? (3)

(g) What is HTML? Why is it used in E commerce?

(4)

(h) Briefly explain types of E-commerce? (4)

(i) List the advantages and disadvantages of E-Commerce. (4)

Section B

2. (a) How copyright law different from patent law?

(5)

(b) Explain ISO/OSI reference model. (5)

3. (a) What is credit card laundering? What is the risk associated with credit card laundering? (5)

(b) Briefly explain advantages and disadvantages of electric commerce over traditional commerce.

(5)

4. (a) What are the various properties of money transfer that are being addressed by the ACID test and ICES test? (5)

(b) Explain major provisions contained in IT ACT 2000. (5)

5. (a) Explain advantage and disadvantage of Outsourcing and In-house website development.

(5)

(b) Explain the various ethical issue related to E-commerce.

(5)

P.T.O.

6. (a) What are the difference between brick and click and pure business model?

(5)

(b) Privacy is a basic human value that is inadequately addressed in e-commerce. What measures can you suggest to protect privacy in internet transactions?

(5)

7. Briefly explain life cycle for launching online business.

(10)

8. Write Short notes on **any two:-**

(10)

(a) Intellectual property

(b) E-Governance

(c) Credit Card

(100)

Your Roll No...............

Sr. No. of Question Paper : 7572

Unique Paper Code : 61018528

Name of the Paper : Quality Management (GEC-5.3)

Name of the Course : **B.Voc. (Web Designing) (CBCS), 2023**

Semester : V

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Attempt **any five** questions.

3. **All questions** carry equal marks.

4. Illustrate with diagrams wherever necessary

1. Define Quality? "A race without a finish line", Explain it in modern scenario?

P.T.O.

2. Explain Deming view on leadership through his 14 points?

3. How a Quality management satisfy a Customer's need? Write the implication of Customer driver Quality Cycle?

4. How an Organisation build the house of quality into services to attract the Market?

5. What are the technique or methods of collecting the voice of Customer satisfaction? Explain it with example.

6. What is QMS? Explain different series of standard of ISO 9000.

7. Write short note on any three of the following

(a) The Juran trilogy

(b) Relationship between quality and price

(c) Customer Relationship Management Technique

(d) Six Sigma Methodology

(100)