

16/10/2024 done

F.Y.B.Sc.(D.S.) – Semester I
Python Programming Fundamentals

(Time: 1 hour)

Total Marks: 30

- N. B.: (1) All questions are **compulsory**.
(2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
(3) Answers to the **same question** must be **written together**.
(4) Numbers to the **right** indicate **marks**.
(5) Draw **neat labeled diagrams** wherever **necessary**.
(6) Use of **Non-programmable** calculators is **allowed**.

1. Attempt **any three** of the following:

15

- What is module. Explain 2 ways of importing module.
- Explain implicit type conversion and explicit type conversion.
- Write a function which accepts string and letter as an argument. The function should count how many times the letter appears in the string. Write a complete python program.
- Explain range() and input() function with code.
- Write a note on string slices. Strings are immutable. --- explain

2. Attempt **any three** of the following:

15

- Explain private method and private variable concept in python class with code.
- Explain concept of Exception with example.
- How to access elements from a dictionary. How to add and delete elements from a dictionary.
- How to delete a list and elements of a list? Explain list operations with + and *.
- How to create a class in Python. Explain init function.

F.Y.B.Sc.(D.S.) – Semester I
Digital Marketing

Date 17/10/2024

(Time: 1 hour)

Total Marks: 30

- N. B.: (1) **All** questions are **compulsory**.
(2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
(3) Answers to the **same question** must be **written together**.
(4) Numbers to the **right** indicate **marks**.
(5) Draw **neat labeled diagrams** wherever **necessary**.
(6) Use of **non-programmable** calculators is **allowed**.

1. Attempt **any three** of the following: 15
- a. What are the 5 Ds of Digital Marketing?
 - b. State the benefits of digital marketing.
 - c. Explain the 7C's of digital marketing.
 - d. Write a note on Customer journey in digital marketing.
 - e. What are the disadvantages of digital marketing?
2. Attempt **any three** of the following: 15
- a. What are the key components of SEO?
 - b. Explain the different types of email marketing.
 - c. What are the forms of content marketing?
 - d. Explain the usage of Instagram and twitter for social media marketing.
 - e. Suggest ways for managing social media profile for businesses.

F.Y.B.Sc.(D.S.) – Semester I
Foundation of Operating System

(Time: 30 Minutes)

Date 18/10/2024

Total Marks: 15

- N. B.: (1) **All** questions are **compulsory**.
(2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
(3) Answers to the **same question** must be **written together**.
(4) Numbers to the **right** indicate **marks**.
(5) Draw **neat labeled diagrams** wherever **necessary**.
(6) Use of **Non-programmable** calculators is **allowed**.

Attempt any three of the following:

- a. What is a Process in an operating system? Also explain different states of Process.
- b. What is deadlock? What are different methods to prevent deadlock?
- c. Write short note on Multitasking operating system.
- d. Explain Variable Sized Partitioning with suitable example.
- e. Differentiate between User-level thread and Kernel-level thread.

15

19-10-24

F.Y.B.Sc.(D.S.) – Semester I
DATABASE DESIGN & MANAGEMENT - I
(Time: 1 hours)

Total Marks: 30

- N. B.: (1) **All** questions are **compulsory**.
(2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
(3) Answers to the **same question** must be **written together**.
(4) Numbers to the **right** indicate **marks**.
(5) Draw **neat labeled diagrams** wherever **necessary**.
(6) Use of **Non-programmable** calculators is **allowed**.

1. Attempt **any three** of the following: 15
- a. Write a note on RDBMS
 - b. Explain the basic building blocks of data model with the help of diagram.
 - c. Explain Entity relationship (ER) model with the help of diagram.
 - d. Explain the 5 aggregate functions with the help of SQL commands.
 - e. Explain the 4 types of mapping constraints with the help of diagram.
2. Attempt **any three** of the following: 15
- a. Explain the difference between DCL & TCL languages with the help of various commands.
 - b. Write a note on “sub-query”. Give suitable example for both IN & EXISTS operators.
 - c. What do you mean by transactions in DBMS? What are its various properties?
 - d. Explain right join with the help of diagram.
 - e. Write a short note on “Views”. Write down the commands for creating, selecting & removing views

F.Y.B.Sc.(D.S.) – Semester I
Web Designing

(Time: 30 Minutes)

Total Marks: 15

- N. B.: (1) **All** questions are **compulsory**.
(2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
(3) Answers to the **same question** must be **written together**.
(4) Numbers to the **right** indicate **marks**.
(5) Draw **neat labeled diagrams** wherever **necessary**.
(6) Use of **Non-programmable** calculators is **allowed**.

1. Attempt **any three** of the following:

15

- a. How does the web work? Explain the components of the web.
- b. Discuss the Bookmark concept with a suitable example.
- c. Explain CSS with its Syntax.
- d. Explain the table with the following concept
i. Table ii. Caption iii. Tr iv. Th v. Td
- e. Discuss the Padding concept with a suitable example.

22-10-24

F.Y.B.Sc.(D.S.) – Semester I
SUBJECT: MATHEMATICAL FOUNDATION FOR DATA SCIENCE

(Time: 1 hour)

Total Marks: 30

- N. B.: (1) **All** questions are **compulsory**.
(2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
(3) Answers to the **same question** must be **written together**.
(4) Numbers to the **right** indicate **marks**.
(5) Draw **neat labeled diagrams** wherever **necessary**.
(6) Use of **Non-programmable** calculators is **allowed**.

1. Attempt **any three** of the following:

15

- a. If $A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 2 & 2 & 1 \end{bmatrix}$ then prove that $A^2 - 4A - 5I$ is a null matrix
- b. Show that vertices $A(2, -1, 1)$, $B(1, -3, -5)$ and $C(3, -4, -4)$ forms right - angled triangle
- c. Find the inverse of matrix $A = \begin{bmatrix} 1 & 4 & -1 \\ 3 & -1 & 1 \\ 2 & -1 & 1 \end{bmatrix}$ by adjoint method
- d. Find the value of constant p so that 3 vectors $\vec{a} = 2\vec{i} - \vec{j} + \vec{k}$, $\vec{b} = \vec{i} + 2\vec{j} - 3\vec{k}$, $\vec{c} = 3\vec{i} + p\vec{j} + 5\vec{k}$ are coplanar.
- e. Let $f(x) = 5x + 3$, $g(x) = 2x + 5$ & $h(x) = 3x - 2$ be given functions defined on set of real numbers. Find k so that $f \circ g(-2) = g \circ h(k)$

2. Attempt **any three** of the following:

15

- a. Given: $\sin A = -\frac{5}{13}$, $\pi < A < \frac{3\pi}{2}$ & $\cos B = \frac{3}{5}$, $\frac{3\pi}{2} < B < 2\pi$. Find the value of $\sin(A + B)$
- b. For an A.P. 7th term is 29 & 10th term is 41. Find first term & common difference of the sequence. Also find sum of first 9 terms of the sequence.
- c. n^{th} term of sequence 2, 8, 32, 128, ----- is 2048. Find n . Also find 7th term & sum of first 5 terms of the given sequence.
- d. A committee of 4 persons is to be formed among 4 girls & 9 boys. In how many ways this can be done if there are
- No girls
 - 3 boys & 1 girls
 - Equal number of boys & girls
- e. If $nP_r = 360$ & $nC_r = 15$ then find n & r

F.Y.B.Sc.(D.S.) – Semester I
Green Innovations

23-10-24

(Time: 1 hour)

Total Marks: 30

- N. B.: (1) **All** questions are **compulsory**.
(2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
(3) Answers to the **same question** must be **written together**.
(4) Numbers to the **right** indicate **marks**.
(5) Draw **neat labeled diagrams** wherever **necessary**.
(6) Use of **Non-programmable** calculators is **allowed**.

1. **Attempt any three of the following:** 15
- a. What is Green Computing? What steps can be taken to reduce carbon emission?
 - b. List and explain the various toxins present in computer systems.
 - c. What is carbon footprint? Briefly explain how to compute company's carbon footprint?
 - d. Write a short note on RoHS.
 - e. What are the steps taken to green the data centres?
2. **Attempt any three of the following:** 15
- a. Explain any two low-cost devices for checking power on workstations.
 - b. Explain how to involve the utility company to reduce power costs?
 - c. How you can minimize excessive power output from wireless devices?
 - d. List the tips to keep water usage under control. Also list the issues to prevent wasted water.
 - e. Briefly explain steps in setting up a telecommuting program.

24-10-24

F.Y.(DS) – Semester I
SUBJECT – Effective Communication Skills-I

(Time:1 hour)

Total Marks: 30

- N. B.: (1) All questions are **compulsory**.
(2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
(3) Answers to the **same question** must be **written together**.
(4) Numbers to the **right** indicate **marks**.
(5) Draw **neat labeled diagrams** wherever **necessary**.
(6) Use of **Non-programmable** calculators is **allowed**.

1. **Attempt any three of the following:** 15
- a. Elaborate the importance of oral communication.
 - b. What are the advantages and disadvantages of horizontal communication?
 - c. Explain the preparation required for job interview as a candidate?
 - d. Explain the importance of space and time in nonverbal communication.
 - e. What one should avoid in group discussion?
2. **Attempt any three of the following:** 15
- a. Write the important features of organizational charts.
 - b. Explain cubical etiquettes.
 - c. What are the skills required for elocution?
 - d. Explain language barriers and ways to overcome these barriers.
 - e. What are the steps involved in preparing a presentation?

F.Y.B.Sc.(D.S.) – Semester I
BASICS OF INDIAN KNOWLEDGE SYSTEM

Date- 25/10/2024

(Time: 60 min)

Total Marks: 30

Instructions:

1. Q.1 is Compulsory.
2. Attempt any 2 from Q. 2 to Q.4.
3. Figures to the right-hand side indicate full marks.

1. Answer the following

Read the passage and answer the following questions given below:-

10

PASSAGE :

Water resource management in ancient India was an essential and sophisticated practice that significantly influenced agriculture, settlement, and daily life. Recognizing the importance of water, communities constructed reservoirs, tanks, and stepwells to effectively capture and store rainwater, particularly in regions reliant on seasonal monsoons. Iconic stepwells, such as the Rani ki Vav in Gujarat, not only provided water but also served as social and cultural hubs.

Large-scale irrigation systems, including canals and embankments, were developed to divert river water to fields, greatly enhancing agricultural productivity and supporting growing populations. Local governance was crucial, with communities collectively managing water resources, fostering a sense of responsibility and sustainable practices. Texts like the Arthashastra highlighted the importance of equitable water distribution and conservation techniques.

Cultural reverence for rivers, particularly the Ganges and Yamuna, influenced water management practices, integrating spiritual beliefs with environmental stewardship. Rituals emphasized purity and respect for water sources, further motivating conservation efforts. Additionally, ancient techniques such as bunds and check dams were implemented to prevent erosion and promote groundwater recharge. This holistic approach to water management not only addressed immediate needs but also laid the foundation for sustainable practices that resonate in contemporary water management strategies.

QUESTIONS:

1. What structures did ancient Indian communities build for water management?
2. Name any two of the irrigation systems in ancient India.
3. What role did local governance play in water resource management? Which Ancient text described about the importance of equitable water distribution and conservation techniques.
4. How did cultural beliefs influence water management practices?
5. What techniques were used to promote groundwater recharge in ancient India?

2. Answer the following:

- a. Explain any five types of town planning as per Mansara Shilpa Shashtra classification?
- b. Explain the significance of Antecedents of Modern Tourism in India?

5

5

3. Answer the following:

- a. Elaborate the history of town planning in India.
- b. How did the early trade routes of the world influence the spread of tourism in Ancient India?

5

5

4. Answer the following:

- a. Ancient cities like Harappa and Mohenjo-Daro.
- b. Importance of wood carvings in Ancient India.

5

5