2023

COMPUTER SCIENCE — HONOURS

Paper : SEC-1

(Data Visualization Using Spreadsheet)

Full Marks : 75

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer ***question no.*** **1** and ***any three*** from **Section-A** and ***any five*** from **Section-B**.

1. Answer ***any five*** questions : 2×5

(a) Define data visualization.

(b) Name any two spreadsheet software.

(c) What is the purpose of conditional formatting?

(d) State the purpose of lookup functions.

(e) State two differences between absolute and relative referencing in spreadsheet.

(f) Write an Excel formula to find sum of the cells A1, A2, A3, A4, A5, A6, A7 and A8 whose values are greater than 10.

(g) How can worksheet be protected from being modified?

(h) How will you figure age in years from date of birth?

SECTION - A

2. What are outliers in data? How are outliers identified using spreadsheet? 1+4

3. State difference between COUNT and COUNTIF functions. Explain with appropriate examples. 3+2

4. Why is data analysis needed? Write the steps to analyze data in Excel. 2+3

5. What is the role of comments in a spreadsheet? How can we track changes in a spreadsheet? 2+3

6. Discuss the use and various options of sparklines for visual data analysis. 2+3

SECTION - B

7. (a) How do you find duplicate values in a column of spreadsheet? Write a technique to remove those duplicate values.

   (b) How is a Formula different from a Function in Excel?

   (c) Illustrate with an example to show how the IF () function works in spreadsheet? (2+3)+2+3

8. (a) State various use of pivot table. How do you create a pivot chart in spreadsheet?

   (b) Define Standardisation of data. In spreadsheet, how will you standardise a set of data? (2+3)+(2+3)

9. A travel company gives discounts to clients based upon age as per the following table :

Age	Discount
Children less than 3 years	100% on package price
Children between 3 years and 12 years	20% on package price
Senior citizens above 60 years	10% on package price

A snapshot of the records is as below :

	A	B	C	D	E	F	G
1	Name	City	Phone Number	Age	Package Price	Discount	Discounted Price
2	Anju Haldar	Kolkata	1234567890	65	35000		
3	Banani Ghosh	Burdwan	2345678901	30	18000		
4	Kaya Banerjee	Kolkata	3456789012	2	30000		
5	Chaitali Sinha	Kolkata	4567890123	55	14000		
6	Arup Dev	Howrah	5678901234	55	60000		
7	Sayantan Mitra	Howrah	6789012345	10	41000		

   (a) Write formula to find the discount.

   (b) Write formula to find the discounted price.

   (c) Write steps to display the data in decreasing order of age followed by increasing order of package price.

   (d) Write steps to diaplay the records of only those clients who are from Kolkata. 3+2+3+2

10. (a) What problems can be solved with Monte Carlo simulation? What are the steps in a Monte Carlo simulation?

    (b) Name various types of charts with their uses in visualizing data in spreadsheet. What is formula bar? (2+4)+(3+1)

11. (a) Explain syntax, purpose and examples with output of the following functions :

    (i) MID ( ) (ii) RANDBETWEEN ( ) (iii) AVERAGEIF ( ) (iv) AND ( )

    (b) What is the purpose of dashboard in spreadsheet? (2+2+2+2)+2

12. (a) What is a ribbon?

(b) Why is data validation necessary? Explain its usage.

(c) Discuss 'Grouping' and 'Ungrouping' of data. 2+5+3

13. (a) Explain the differences between SUBSTITUTE and REPLACE functions.

(b) Describe three statistical methods to calculate central tendency using spreadsheet. 4+6

14. Write short notes on (***any two***) : 5×2

(a) Scenario Manager

(b) ANOVA table and formulas

(c) Track changes

(d) Preparation of Histogram in spreadsheet.
