Time Table - F. Y. B. Sc. (Data Sc) Semester-I (Regular) Dec-2023

Sr. No.	Date	Day	Name of the Subjects	Time	Duration
1	11-12-2023	Monday	Descriptive Statistics	02:30 pm to 05:00 pm	2 ½ Hrs
2	12-12-2023	Tuesday	Introduction to Programming	02:30 pm to 05:00 pm	2 ½ Hrs
3	13-12-2023	Wednesday	Web Technology	02:30 pm to 05:00 pm	2 ½ Hrs
4	14-12-2023	Thursday	Bus. Comm. & Information Ethics	02:30 pm to 05:00 pm	2 ½ Hrs
5	15-12-2023	Friday	Precalculus	02:30 pm to 05:00 pm	2 ½ Hrs

Note: 1) Students without valid I-Card are not allowed to sit for the Semester End Examination.
2) Seating arrangement will be displayed later on notice board.
3) Mobile phones are not allowed in the examination hall.

Prof. Shahid Pervez
Chairman, Exam Comm.
Professional Courses

Prof. (Dr.) Hanif Lakdawala
Asst. Director
Professional Courses

Prof. (Dr.) Shaukat Ali
Principal

APCCE/FYDS/Sem-I/Introduction to Programming/2023-24

Duration : 2 ½ hrs. **Maximum Marks: 75**

Note : 1) All questions are compulsory. 2) Draw the figure wherever necessary.

Q.1: **Attempt any three.** **[15 M]**

a) What is variable? Write the different conditions used while creating variable.

b) What is type conversion? Explain with suitable example.

c) Differentiate between HLL and LLL.

d) What is function? Explain any four built in functions in python.

e) Write a python program that calculates area of triangle.

f) Write a program to display odd numbers between 51 to 100 using while loop.

Q.2: **Attempt any three.** **[15 M]**

a) Explain the comparison operator in python with suitable example.

b) What is string? Explain how to access string through for loop.

c) Write and explain the 'input' statement in python.

d) Explain "if" statement with suitable example.

e) Write a program that reads three numbers and find largest number.

f) Write a program that displays 1 to n numbers in reverse order using while loop.

Q.3: **Attempt any three.** **[15 M]**

a) Explain range function with suitable example.

b) Write and explain the features of python.

c) Explain the use of "continue" statement in "for" loop.

d) Explain min( ), max( ), int( ), len( ) and print( ) functions in python.

e) Write a python program that reads radius of circle and calculate its area.

f) Write a program that reads a number and check it is positive, negative or zero.

Q.4: **Attempt any three.** **[15 M]**

a) What is user defined function in python? Explain with example.

b) What is an operator? Explain arithmetic and relational operators in python.

c) Write and explain the different data types in python.

d) Explain the use of "break" statement in "for" loop.

e) Write a program to displays 1 – n numbers and calculate their sum and average.

f) Write a program that reads a number and check it is divisible by 3 or not.

Q.5: **Attempt any three.** **[15 M]**

a) What is math module? Explain any four functions available in math module.

b) Write a note on compiler and interpreter.

c) What is list? Explain how to add and delete element in list.

d) Explain how to use for loop to access list elements with suitable example.

e) Write a program that reads a number and check it is odd or even as well as check it is divisible by 3 or not.

f) Write a program that reads a number and check it is odd or even.

--- ALL THE BEST ---

Department of B. Sc. (Data Science)

APCCE / Class: FYDS / SEM-I / SUB: Descriptive Statistics/ DUR 2 ½ Hrs. / Mks: 75 / DT. _____

Note:
1)All questions are compulsory.
2) Figures to the right indicate marks.
3) Mixing of sub-questions is not allowed and try to accommodate whole QP in single page.

Q1.	**Attempt any THREE:**		**[15]**
	a.	Explain the scope and importance of statistics.	
	b.	Write a short note on NSSO.	
	c.	Compare primary and secondary data.	
	d.	Discuss the concept of population and sample in statistics.	
	e.	Explain the different types of scales of measurement in brief.	
	f.	List the advantages of tabulation.	
Q2.	**Attempt any THREE:**		**[15]**
	a.	Compare between mean, median and mode.	
	b.	Explain the different types of dispersion in details.	
	c.	What is skewness? Also explain its types	
	d.	Rahna's maths quiz scores in 9 competitions were 88, 97, 87, 92, 90, 88, 93, 98 and 95. What was her median quiz score?	
	e.	A statistical data was collected from 11 school children on the number of hours they spend watching television in one week. The data is given below 3, 8.5, 12, 9, 16.5, 9, 14, 20, 18, 19, 20. Find quartile deviation	
	f.	For a distribution Mean=30, Mode=26.8 and variance=64. Find the coefficient of Skewness. Interpret the result.	
Q3.	**Attempt any THREE:**		**[15]**
	a.	What is standard deviation? List merits and demerits of it.	
	b.	Write a short note on quartile deviation.	
	c.	Explain relative measures of dispersion in details.	
	d.	The following data pertains to the length of service (in years) and the annual income in thousands for a sample of 8 employees in an industry. Find covariance.	
	e.	For a newly created post the manager interviewed the candidates in 5 days. The number of candidates in each day were 16, 19, 15, 15, &14 respectively. Find variance.	
	f.	A survey was conducted for the number of road accidents in a major city during 11 successive weeks. The results are given below 8, 6, 3, 0, 5, 9, 2, 1, 3, 5, 2. Calculate SD of road accidents.	
Q4.	**Attempt any THREE:**		**[15]**
	a.	List the advantages of correlation.	
	b.	Difference between correlation and regression.	
	c.	What is regression analysis?	
	d.	Coefficient of correlation between X and Y is 0.3. Their covariance is 9. The variance of X is 16. Find the standard deviation of Y series.	

Length of service(x)	6	8	9	10	11	13	15	16
Annual of Income(y)	14	17	15	18	16	22	25	25

e. Find out spearman's coefficient of correlation between the two kinds of assessment of graduate students' performance in a college.

Name of Students	A	B	C	D	E	F	G	H	I
Internal Exam	51	68	73	46	50	65	47	38	60
External Exam	49	72	74	44	58	66	50	30	35

f. From the following data calculate regression coefficient of X on Y (bxy).

Capital Employed (Rs. In Lakh)	7	5	5	9	12	9	10	15
Sales Volume (Rs. In Lakh)	4	8	2	6	9	5	7	12

Q5. **Attempt any THREE:** [15]

a. Explain the different components of the time series.

b. State analysis or decomposition of time series.

c. List the advantages of time series analysis.

d. From the following data, calculate trend values using 3-yearly moving average:

Year	1981	1982	1983	1984	1985	1986	1987
Production	412	438	446	454	470	483	490

e. Fit a trend line by the method of semi-averages to the data given below:

Year	1981	1982	1983	1984	1985	1986	1987
Profit ('000 Rs)	20	22	27	26	30	29	40

Also state merits and demerits of it.

f. Assuming that trend is absent, determine if there is any seasonality in the data given below using simple average method:

Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
1982	37	41	33	35
1983	37	39	36	36
1984	40	43	33	31

What are the seasonal indices of various quarter?

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APCCE / FYDS / SEM-I / WEB-TECH / REG – DEC-23 / MKS: 75 / Dur. H ½ Hrs. / DT. _____

Note: All questions are compulsory:

Q1. Attempt any **THREE** from the following: **[15]**

a. Define the Internet and explain its functions, applications.
b. Define a browser and detail the distinctive features of three different browsers.
c. Elaborate on the functions and roles of a search engine, web server.
d. Provide a concise description of a URL with example.
e. Explain any five HTML5 tag with example.
f. Write short notes on and proxy server.

Q2. Attempt any **THREE** from the following: **[15]**

a. Write HTML code to create below table:

Students Information	Name	Address	
		City	House No
	A	HND	1
	B	LHR	2
	C	SWL	3
	D	BWP	4

b. Write short notes on: 1. Textbox 2. Radio button
c. Explain <a> tag with suitable program segment.
d. Explain the process of embedding YouTube videos on a web page with specified width and height parameters.
e. What is image mapping? Explain with example.
f. Elaborate on padding, margin, and borders in CSS, providing examples to illustrate their usage.

Q3. Attempt any **THREE** from the following: **[15]**

a. Define the concept of styling and explain the functionality of CSS.
b. Explain any three graphics/image file format used in web technology.
c. What is navigation bar? Explain with program segment.
d. Define the concept of styling and explain the functionality of CSS.
e. Discuss list item markers in HTML and CSS, including their styling and design using CSS.
f. Write HTML code to cretae following Unordered list:

Unordered list

My typical dinner shopping list:

- Milk
- Donuts
- Cookies
  - Chocolate
  - Sugar
  - Peanut Butter
- Pepto Bismol

Q4. Attempt any **THREE** from the following: **[15]**

a. Explain the use of javascript in the web technology with advantages and disadvantages.
b. Develop a JavaScript program that prints numbers from 1 to 1000, excluding the numbers which are divisible by 9.
c. Elaborate on the following events in JavaScript:
(i) Mouseover (ii) Mousemove (iii) Click (iv) Onclick (v) Onload
d. Write javascript code to move a line of text using <marquee> and stop when user put the mouse over text and start moving when user take out the mouse from the text.
e. Explain try catch statement in javascript with example.
f. Write javascript code to input 2 integer numbers and find out greater number from these.

Q5. Attempt any **THREE** from the following: **[15]**

a. Define JSON and elaborate on its structure, applications, and how it's used in data exchange.
b. Discuss the components of JSON data: name-value pairs, JSON objects, and JSON arrays, providing appropriate examples.
c. Outline the syntax rules for JSON and offer an example of a JSON object
d. Compare and contrast JSON and XML in terms of structure, usage, and key differences.
e. Elaborate on the role and functionality of a JSON parser.
f. How to parse JSON file? Explain with example.

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APCCE / FYDS / SEM-I / BC & IE / REG – DEC-23 / MKS: 75 / Dur. H ½ Hrs. / DT. _____			
Note: All questions are compulsory:			
Q1.	Attempt any **THREE** from the following:		[15]
	a.	What stages does communication go through, and show it in a diagram?	
	b.	Write down the traits and importance of communication in different situations.	
	c.	Explain what communication is and highlight its importance in how people connect	
	d.	Explain non-verbal communication, like gestures or body language, and its main aspects.	
	e.	Describe the Seven C's rule and why it matters for good communication.	
	f.	How does technology help business communication, and what's its impact on modern business interactions?	
Q2.	Attempt any **THREE** from the following:		[15]
	a.	Explain how to write a business letter, highlighting its important parts and etiquette.	
	b.	Write down writing instructions in a simple and user-friendly way.	
	c.	Describe business proposals and what makes them persuasive.	
	d.	Write down building a career, including strategies and skills for professional growth.	
	e.	Explain how a resume is organized and why it's important for job applications.	
	f.	Explain the listening process and its main components.	
Q3.	Attempt any **THREE** from the following:		[15]
	a.	Write down how to run meetings well for best results.	
	b.	Look into using language in different ways for clearer communication.	
	c.	Explain the different parts of a company and how they help it work better.	
	d.	Compare different ways teams give presentations when they work together	
	e.	Share tips to do better in conferences and join in effectively.	
	f.	Describe how asking questions works in meetings.	
Q4.	Attempt any **THREE** from the following:		[15]
	a.	Explain what 'Corporate Communication' is and why it's important for a company's reputation.	
	b.	Write down the different kinds of corporate communication.	
	c.	Describe a three-step method for writing persuasive messages.	
	d.	Write down the importance of: i) Logos ii) Positive or negative motivation iii) Social needs iv) Safety needs in different situations.	
	e.	Explain what to consider when picking visuals and why matching them to the content and situation matters.	
	f.	Write down the importance of: i) Team Viewer ii) Microsoft Teams iii) Google Meet iv) Zoom.	
Q5.	Attempt any **THREE** from the following:		[15
	a.	Write down the basic idea of planning and why it matters in different situations.	
	b.	Give a quick look at mind mapping and how it's used.	
	c.	Explain outlines and how they're used with templates.	
	d.	Describe visual communication and how it helps share information.	
	e.	Define "during the presentation" and Write down what it means.	
	f.	Explain what happens after a presentation, like what actions come next and the follow-ups.	

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Department of B. Sc. (Data Science)

APCCE / Class: FYDS / SEM-I / SUB: PRECALCULUS/ DUR 2 ½ Hrs. / Mks: 75 / DT: _____

Note: 1)All questions are compulsory.

2) Figures to the right indicate marks.

3) Mixing of sub-questions is not allowed and try to accommodate whole QP in single page.

Q1. Attempt any THREE: [15]

a. Explain Algebraic Expression.

b. Solve the following system of equation
$\frac{5}{x} + \frac{4}{y} = 22, \quad \frac{3}{x} + \frac{2}{y} = 12$

c. Define Functions?

d. Determine all the roots of $f(t)= 9t^3-18t^2+6t$.

e. Let $f: A \rightarrow B$ be a function determine whatever the function is one to one, onto everywhere, defined also verify whether f-1 exist, if so then find the rule for f-1.
$A = R - (\frac{-3}{5}) \quad B = p - (\frac{9}{5}) \quad f(x) = \frac{9x+5}{5x+3}$

f. $P(x) = 2x^4+x^3-6x^2-7x-2$.

Q2. Attempt any THREE: [15]

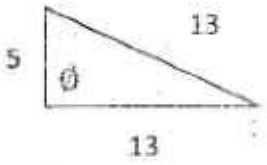
a. Explain Logarithmic function.

b. Find all the solution to $12-4e^{7+3x} =7$ if there are no solution clearly explain why?

c. Solve the equation exactly. $\cos^2\emptyset + 3\cos\emptyset + 1 = 0$ where $0 \leq \emptyset < 2x$.

d. Simplify $\frac{Sec^2x-1}{Sin^2-x}$

e. Find all six trigonometric formulas.



f. Simplify $1=10-3e^{z^2} - 2z$.

Q3. Attempt any THREE: [15]

a. Given $\text{Sin A} = \frac{4}{5}$ & $\text{Cos B} = \frac{5}{13}$, $\text{Cos A} = \frac{3}{5}$ and $\text{Sin B} \quad \frac{12}{13}$ both A& B is in quadrant I find. a) Sin(A+B) b) Cos(A+B) c) tan(A+B)

b. Find the exact value cos 75°.

P.T.O.

c. Explain Double Angle formula with example.

d. Using trigonometric functions of 60°, find the value of
   a) Sin120° b) Cos120° c) tan 120°

e. Verify the following identities.
   $\sin 3x = 3 \sin x - 4 \sin^3 x$

f. Explain half angle formula with example.

Q4. Attempt any THREE: [15]

a. Explain Polar Coordinates.

b. Assuming a common origin and the x-axis as the initial line. Find the polar co-ordinates of the points with the following Cartesian co-ordinate.
   a) (2,2) b) (-3,4)

c. Explain vector addition and scalar multiplication.

d. Find the distance between P = (1, -5, 4) & P2 = (4, -1, -1).

e. Find the Cartesian equation of the curve.

$$\frac{2}{r} = 1 + \cos\theta$$

f. Let V = (-2, 9, 5) and W = (1, -1, 0) find the following vectors.
   a) 3V - 2W b) ||5w||

Q5. Attempt any THREE: [15]

a. Find the sphere (10, 7, 4) & point (-1,3,-2).

b. Explain properties of vectors.

c. Find the value of the 25th term of the arithmetic sequence 5,9,13,17.

d. Find the sum of all odd integers from 1 to 1001.

e. Expand the following determinants.

$$D = \begin{vmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{vmatrix}$$

f. Let vector $\vec{A} = 3i+2j+2k$ and vector $\vec{B} = i+2j+k$ find the dot product of vectors A & B.

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