Prahladrai Dalmia Lions College of Commerce & Economics
ISO 9001 : 2015 CERTIFIED
Sunder Nagar, Malad (West), Mumbai, 400 064

NOTICE

SELF FINANCED SECTION

BSc. (INFORMATION TECHNOLOGY)

IMPORTANT INSTRUCTIONS WHILE SUBMITTING INTERNAL PROJECT (ATKT), SEPT 2019 (SEM II AND IV)

1) The project should be hand written only.
2) The project should be submitted on assignment paper within a file.
3) The student should write his name, department, semester, exam seat no. and subject on the first page.
4) Student should download and take printout of questions to his Roll no. and attach it with his answer paper.
5) Student to submit photocopy of fee payment receipt with every subject.
6) Student should submit the project as mentioned below:

All the students having internal ATKT have to appear for internal project Viva-Voce examination.

SEM II

Sr. no.	Subject	Faculty	Room no.	Date	Time
1.	Object Oriented programming	Prof Sanjana	FT2	30/9/2019	9 am to 10 am
2.	Microprocessor Architecture	Prof Sanjana	FT2	30/9/2019	9 am to 10 am
3.	Web Programming	Prof Rupali	FT2	30/9/2019	9 am to 10 am
4.	Numerical & Statistical methods	Prof Ashok	FT2	30/9/2019	9 am to 10 am
5.	Green Computing	Prof Ashok	FT2	30/9/2019	9 am to 10 am

SEM IV

Sr. no.	Subject	Faculty	Room no.	Date	Time
1.	Computer Oriented Statistical Techniques	Prof Ashok	FT2	30/9/2019	9 am to 10 am

F.Y.BSc.I.T. Sem II A.T.K.T. September Internal Exam (2019-20)

Subject : OOP

Roll No : 156

1.	What is object oriented programming? State its applications.
2.	Explain the structure of C++ class.
3.	Explain the concept of function overloading with suitable example.
4.	Explain in brief about hybrid inheritance with suitable example.
5.	Explain the concept of function template with suitable example

Roll No: 151

1.	What is polymorphism? Give suitable example for the same.
2.	Write a C++ program to implement the concept of constructor and destructor.
3.	List the operators that cannot be overloaded. Explain the rules for overloading the operators
4.	Explain the mechanism of handling the exception with suitable example.
5.	Write a C++ program to copy the contents from one file to other file.

Roll No: 121

1.	Distinguish between OOP and POP
2.	What is Inheritance? Give types of Inheritance
3.	Write note on Abstract class.
4.	Explain event handling in C++
5.	Write a program to explain the concept of operator overloading

Roll No: 106

1.	List and explain different types of errors.
2.	What are the different application of Linear Programming
3.	Find the 4th approximation of the positive root of the function $f(x)=x^3-7$ using the bisection method.
4.	Find the polynomial using Lagrange's interpolation polynomial. X: 1, 2, 3, 4 F(x): 8, 12, 16, 20
5.	What are discrete random variables? Explain with an example.

Roll No: 117

1.	Find the polynomial using Lagrange's interpolation polynomial. X: 1, 2, 3, 4 F(x): -12, 0, 6, 12
2.	Explain Floating point of numbers and Errors
3.	Find the 4th approximation to the solution of the equation below using the bisection method. $f(x)= 3x^3 + 5x^2 + 14x - 16$
4.	What is Interpolation method? Give an example.
5.	What are continues random variables? Explain with an example.

Roll No: 122

1.	Prepare Newton's Forward Difference Table. X: 1, 2, 3, 4 F(x): -12, 0, 6, 12
2.	What are the different types of errors
3.	Find the 4th approximation to the solution of the equation below using the secant method. $f(x)= 3x^3 + 5x^2 + 14x - 16$
4.	Define following terms 1. Variance 2. PDF 3. PMF
5.	What are continues random variables? Explain with an example.

Roll No: 129

1.	State the characteristics of typical mathematical models of physical world. Explain with example.
2.	Use the Bisection method to find solutions accurate to within 10–2 for $x3 - 7x2 + 14x - 6 = 0$ in the interval [3.2,4].
3.	Let p = 0.54617 and q = 0.54601. Use four-digit arithmetic to approximate p – q and determine the absolute and relative errors using (i) ROUNDING and (ii) TRUNCATING.
4.	Discuss the conservation laws and engineering with respect to mathematical models
5.	The fourth-degree polynomial $f(x) = 230x4 + 18x3 + 9x2 - 221x - 9$ in [0, 1]correct upto 4 decimal places using Regula-Falsi method.

Roll No: 132

1.	Solve the following system by using the Gauss-Jordan elimination method. $a + b + 2c = 1$ $2a - b + d = -2$ $a - b - c - 2d = 4$ $2a - b + 2c - d = 0$
2.	Find the least square polynomial approximation of degree two to the data x 0 1 2 3 4 y −4 −1 4 11 20
3.	A painter has exactly 32 units of yellow dye and 54 units of green dye. He plans to mix as many gallons as possible of color A and color B. Each gallon of color A requires 4 units of yellow dye and 1 unit of green dye. Each gallon of color B requires 1 unit of yellow dye and 6 units of green dye. Find the maximum number of gallons he can mix graphically
4.	Rita wants to buy x oranges and y peaches from the store. She must buy at least 5 oranges and the number of oranges must be less than twice the number of peaches. An orange weighs 150 grams and a peach weighs 100 grams. Joanne can carry not more than 3.6 kg of fruits home. i) Write 3 inequalities to represent the information given above. ii) Plot the inequalities on the Cartesian grid and show the region that satisfies all the inequalities. Label the region S. iii) Oranges cost ⊡ 0.70 each and peaches cost ⊡ 0.90 each. Find the maximum that Rita can spend buying the fruits.
5.	What is the probability of getting a total of 9 (i) twice and (ii) at least twice in 6 tosses of a pair of dice?

Roll No: 137

1.	A car hire firm has two cars which it fires out day by day. The number of demands for a car on each day is distributed as Poisson variate with mean 1.5. Calculate the proportion of days on which (i) neither car is used, and (ii) some demand is refused
2.	Determine the absolute and relative errors when approximating p by p* when i. $p = 0.3000 \times 101$ and $p^* = 0.3100 \times 101$ ii. $p = 0.3000 \times 10^{-3}$ and $p^* = 0.3100 \times 10^{-3}$ iii. $p = 0.3000 \times 104$ and $p^* = 0.3100 \times 104$
3.	Use the Bisection method to find solutions accurate to within 10–2 for $x3 - 7x2 + 14x - 6 = 0$ in the interval[3.2,4].
4.	Prepare Newton's Backward Difference Table. X 1 2 3 4 F(x) -12 0 6 12
5.	Evaluate $\int_0^1 8x^2 dx$ 0.3 0 using Simpson's 3/8th rule.

1.	Find f (0.9) if f (0.6) = −0.17694460, f (0.7) = 0.01375227, f (0.8) = 0.22363362, f (1.0) = 0.65809197 using Lagrange's Interpolation formula.
2.	Apply Taylor's method of order two with N = 10 to the initial-value problem $y' = y - t^2 + 1, 0 \le t \le 2, y(0) = 0.5$
3.	Rita wants to buy x oranges and y peaches from the store. She must buy at least 5 oranges and the number of oranges must be less than twice the number of peaches. An orange weighs 150 grams and a peach weighs 100 grams. Joanne can carry not more than 3.6 kg of fruits home. i) Write 3 inequalities to represent the information given above. ii) Plot the inequalities on the Cartesian grid and show the region that satisfies all the inequalities. Label the region S. iii) Oranges cost ₹ 0.70 each and peaches cost Rs. 0.90 each. Find the maximum that Rita can spend buying the fruits.
4.	The fourth-degree polynomial $f(x) = 230x^4 + 18x^3 + 9x^2 - 221x - 9$ in [0, 1] correct upto 4 decimal places using Regula-Falsi method.
5.	State the characteristics of typical mathematical models of physical world. Explain with example.

Roll No: 149

1.	State the characteristics of typical mathematical models of physical world. Explain with example.
2.	Suppose that you have the task of measuring the lengths of a bridge and a rivet and come up with 9999 and 9 cm, respectively. If the true values are 10,000 and 10 cm, respectively, compute (i) the true error and (ii) the true percent relative error for each case.
3.	The fourth-degree polynomial $f(x) = 230x^4 + 18x^3 + 9x^2 - 221x - 9$ in [0, 1] correct upto 4 decimal places using Regula-Falsi method.
4.	Solve the following system by using the Gauss-Jordan elimination method. $a + b + 2c = 1$ $2a - b + d = -2$ $a - b - c - 2d = 4$ $2a - b + 2c - d = 0$
5.	Evaluate $\int \sqrt{1 - 8x^2} dx$ 0.3 0 using Simpson's 3/8th rule.

Roll No: 151

1.	Discuss the conservation laws and engineering with respect to mathematical models
2.	What are the different types of errors
3.	Find the 4th approximation to the solution of the equation below using the secant method. $f(x) = 3x^3 + 5x^2 + 4x - 16$
4.	The fourth-degree polynomial $f(x) = 230x^4 + 18x^3 + 9x^2 - 221x - 9$ in [0, 1] correct upto 4 decimal places using Regula-Falsi method.
5.	Define following terms 1. Variance 2. PDF 3. PMF

Roll No: 156

1.	Use the Bisection method to find solutions accurate to within 10−2 for $x3 - 7x2 + 14x - 6 = 0$ in the interval [3.2,4].
2.	Find f (0.9) if f (0.6) = −0.17694460, f (0.7) = 0.01375227, f (0.8) = 0.22363362, f (1.0) = 0.65809197 using Lagrange's Interpolation formula.
3.	Evaluate $\int \sqrt{1 - 8x}\, 2dx$ 0.3 0 using Simpson's 3/8th rule
4.	A petrol pump is supplied with petrol once a day. If its daily volume X of sales in thousands of litres is distributed by $f(x) = 5(1 - x)\,4, 0 \le x \le 1$ what must be the capacity of its tank in order that the probability that its supply will be exhausted in a given day shall be 0.01?
5.	What is the probability of getting a total of 9 (i) twice and (ii) at least twice in 6 tosses of a pair of dice?

Subject : Green Computing

Roll No: 156

1.	Explain the features and hardware specification of Excito.
2.	How you can minimize excessive power output from wireless devices
3.	Write a note on cooling optimization by data center design.
4.	What is Microsoft office SharePoint Server 2007.
5.	Write a short note on Basel Action Network

Subject : MA

Roll No: 156

1.	What are the various addressing modes of 8085 microprocessor?
2.	Explain the instructions LHLD, XCHG, SHLD, PUSH and POP.
3.	Explain program counter, stack pointer and increment-decrement latch of 8085 microprocessor.
4.	Write a short note on SIM instruction.
5.	List and describe the special Pentium registers.

Roll No: 121

1.	Describe a Microprocessor based system.
2.	Explain the working of the OUT instruction in 8085 microprocessor.
3.	Explain the effect of POP and PUSH instruction on stack pointer
4.	What is the function of assembler, editor and loaders?
5.	What are the features of the Pentium Pro Processor.

Subject : Web Programming

Roll No : 156

1. What is Internet? Write advantages of E-Commerce
2. What are different types of list?
3. What is Scripting language. Explain the feature of any one?
4. What is XML? Write its advantage
5. What is the advantage of PHP with MYSQL

S.Y.BSc.I.T. Sem IV A.T.K.T. September Internal Exam (2019-20)

Subject : COST

Roll No: 216

1. During one year the ratio of milk prices per quart to bread prices per loaf was 3.00, whereas during the next year the ratio was 2.00.
   i. Find the arithmetic mean of these ratios for the 2-year period.
   ii. Find the arithmetic mean of the ratios of bread prices to milk prices for the 2- year period.
   iii. Discuss the advisability of using the arithmetic mean for averaging ratios.
   iv. Discuss the suitability of the geometric mean for averaging ratios.

2. The following table gives the heights of 100 students at XYZ College. Find the mean height of the students.

Height	No. Of Students
60-62	5
63-65	18
66-68	42
69-71	27
72-74	8

3. Two variables, X and Y, assume the values $X_1 = 2, X_2 = -5, X_3 = 4, X_4 = -8$ and $Y_1 = -3, Y_2 = -8, Y_3 = 10, Y_4 = 6$, respectively.
   Calculate: i. ΣXY, ii. $\Sigma X \Sigma Y$, iii. ΣXY^2, iv. ΣX^2, v. $\Sigma(X-Y)(X+Y)$

4. On a final examination in statistics, the mean grade of a group of 150 students was 78 and the standard deviation was 8.0. In algebra, however, the mean final grade of the group was 73 and the standard deviation was 7.6. In which subject was there the greater (i) absolute dispersion and (ii) relative dispersion?

5. For a group of 200 candidates, the mean arid standard deviation of scores were found to be 40 and 15 respectively. Later on, it was discovered that the scores 43 and 35 were misread as 34 and 53 respectively. Find the corrected mean and standard deviation corresponding to the corrected figures.