DEERWALK INSTITUTE OF TECHNOLOGY			
FINAL TERM EXAMINATION, SEM I		SUBJECT	CSC- 101 INTRODUCTION TO INFORMATION TECHNOLOGY
PASS MARK	24	FULL MARK	60
TIME	3 HRS	DATE	6 MARCH, 2017

INSTRUCTIONS

Students should be seated in the examination hall 10 minutes prior to the conduction of examination.
Fill in the required details carefully on the front page of the answer sheet.
Do not scribble on the question paper.
Addition answer sheets should be safely stapled in order.
Malpractice observed during the examination will lead to an expulsion.
Raise your hand towards Invigilator in case you need any assistance during the examination.
Good luck and all the best.

Attempt Any Eight Questions [8×5=40]

1. Explain different categories of digital computers and compare it

2. Explain different types of modulation with suitable figures.

3. List out difference between RISC/CISC processor. Explain various types of memory.

4. Explain centralized and distributed processing system.

5. What are the different types of Network Architecture and protocols?

6. Explain Internet and Intranet.

7. Explain data-ware house and its components.

8. Explain the working of an email.

9. What is GIS? Explain GIS process.

10. Write short notes on

    a. Hypermedia   b. TCP / IP protocol

Attempt Any Two Questions [10×2=20]

11. Explain major components of Microprocessor and how it works with memory.

12. Define operating system. What are the various functions of operating system?

13. Discuss Various Types DBMS. What is the purpose of Normalization? Explain with example

DEERWALK INSTITUTE OF TECHNOLOGY			
FINAL TERM EXAMINATION, SEM I		SUBJECT	CSC- 102 FUNDAMENTALS OF COMPUTER PROGRAMMING
PASS MARK	24	FULL MARK	60
TIME	3 HRS	DATE	7 MARCH, 2017

INSTRUCTIONS

Students should be seated in the examination hall 10 minutes prior to the conduction of examination.
Fill in the required details carefully on the front page of the answer sheet.
Do not scribble on the question paper.
Addition answer sheets should be safely stapled in order.
Malpractice observed during the examination will lead to an expulsion.
Raise your hand towards Invigilator in case you need any assistance during the examination.
Good luck and all the best.

Attempt All The Questions [6×10=60]

1. Draw a flowchart to find out whether the given number is zero or positive or negative. Also write a C program.

2. What is an identifier? Explain with examples what valid and invalid identifiers are.

3. Using loop and function, write a program to compute and to print the sum of a given numbers of cubes. For example, if 4 is read from a console, then the program should print 100, which is equal to $1^3 + 2^3 + 3^3 + 4^3$.

4. What is pointer? Explain its applications? Write a program to find the sum of all the elements of an array using pointers.

5. Why structures are required? Make a program using structure of booklist having data members as title, author, and cost. Enter four data and calculate total cost.

6. Write a program to create a text file with a string "Learning C programming is fun" and also to create another text file that contains reverse of the same string.

OR

Write short notes on:

    a. Dynamic memory allocation
    b. Opening and closing file

INSTRUCTIONS

Students should be seated in the examination hall 10 minutes prior to the conduction of examination.
Fill in the required details carefully on the front page of the answer sheet.
Do not scribble on the question paper.
Addition answer sheets should be safely stapled in order.
Malpractice observed during the examination will lead to an expulsion.
Raise your hand towards Invigilator in case you need any assistance during the examination.
Good luck and all the best.

Attempt Any Eight Questions [8×5=40]

1. Describe the application of statistics in computer and computer in statistics

2. Show that the mean is greater than variance of Binomial distribution. Telephone calls enter a college switchboard on the average of two every 3 minutes. If one assumes an appropriate Poisson process, what is the probability of three or more calls arriving in a 9-minute period?

3. An importer is offered a shipment of machine tools for Rs. 140,000, and the probabilities that he will be able to sell them for Rs. 180,000, Rs. 170,000 or Rs. 150,000 are 0.32, 0.55 and 0.13 respectively. What is the Importer's expected variance of gross profit? Prove that $a^2Var(X)+b^2Var(Y)+2abCov(X,Y) = V(aX+bY)$ for dependent X and Y.

4. Define canonical definition of Chi square distribution and write its density function and its some properties. Find the distribution sample mean.

5. What is statistical definition of probabilities and what are its properties? Define conditional probability with suitable example.

6. Suppose that X and Y have joint density function

$$f(x,y) = \frac{9(1+x+y)}{2(1+x)^4(1+y)^4}; 0 < x < \infty, 0 < y < \infty$$

   Find   a. Marginal density function of X and Y   b. Covariance between X and Y.

7. Steel rods are manufactured to be 3 inches in diameter but they are acceptable if they are inside the limits 2.93 inches and 3.01 inches. It is observed that 5% are rejected as oversized and 5% are rejected as undersized. Assuming that the diameters are normally distributed, find the proportion rejection if the limits are widened to 2.985 inches and 3.015 inches.

8. Prove that men deviation about mean is $\frac{2}{3}$ and $\beta_1 =0$ for following distribution. $f(x) = k.x(2 - x); 0 < x < 2.$

9. If X1, X2, ...,Xn are n independent Binomial random variables with common mean p, derive the maximum likelihood estimator of p.

10. The average length of time required to complete a certain aptitude test is claimed to be no more than 80 minutes. A sample of 25 students yielded an average of 86.5 minutes and a standard deviation of 15.4 minutes. Do these results cast doubt on the claim? Assuming that test score is normally distributed answer the query by setting appropriate null and alternative hypotheses and testing the null hypothesis at 5 % level of significance. Find 99% confidence limits of the population mean.

Attempt Any Two Questions [2×10=20]

11. What is regression. Give its properties and prove one of them. A large company wants to measure the effectiveness of radio advertising media (X) on the sale promotion (Y) of its products. A sample of 22 cities with approximately equal population is selected for study. The sales of the product in thousand Rs and the level of radio advertising expenditure in thousand Rs are recorded for each of the 22 cities (n) and sum, sum of square, and sum of cross product of X and Y are summarized below. $\Sigma Y = 26953m$ $\Sigma X = 950$, $\Sigma Y2 = 35528893$, $\Sigma X2 = 49250$, & $\Sigma XY = 1263940$

a. Fit a simple linear regression model of Y on X using the least square method. Interpret the estimated slope coefficient.
b. Compute R^2 and interpret it.

12. Define the following three measures of dispersion – quartile deviation, mean deviation and standard deviation – and clearly state their properties. Write down a situation where quartile deviation is preferred to mean deviation. Score obtained by 14 students in a test are given below. Compute mean, median, mode and kurtosis.

42 39 45 55 38 35 60 55 55 65 40 43 35 37

13.
a. What are the characteristics of good estimator? Differentiate between standard deviation and standard error of estimate.
b. It is claimed that an automobile is driven on the average more than 20,000 kilometers per year.To test this claim, a random sample of 100 automobiles owners are asked to keep a record of the kilometers they travel. Would you agree with this claim if the random sample showed as average of 23,500 kilometers with a standard deviation of 3900 kilometers?

DEERWALK INSTITUTE OF TECHNOLOGY

FINAL TERM EXAMINATION, SEM I		SUBJECT	CSC- 104 CALCULUS AND ANALYTICAL GEOMETRY
PASS MARK	32	FULL MARK	80
TIME	3 HRS	DATE	9 MARCH, 2017

Attempt All The Questions [2×10=20]

1. Find the eccentricity of the curve $2x^2+y^2 = 4$

2. Evaluate $\int_{\pi}^{2\pi} \int_0^{\pi}(sinx + cosy)dxdy$

3. Find the angle between the planes
$$3x-6y-2z = 15 \text{ and } 2x+y-2z = 5$$

4. Obtain the area of region R bounded by $y = x$ and $y = x^2$ in the first quadrant.

5. Find the critical points of $f(x)=X^{4/3}-4x^{1/3}$

6. Find the extreme values of $f(x,y) = x^2+y^2$

7. Find the polar equation of circle $(x-2)^2 +y^2 = 4$

8. Evaluate $\int_0^1 \int_1^3(4xy + 1)dydx$

9. If $f(x,y) = 2x^2+3x^2y^2+y$. Find $\frac{\partial f}{\partial x}$ at $(1,2)$

10. Using partial derivative, find $\frac{dy}{dx}$ if $x^2+cosy-y^2 = 0$

Attempt All The Questions [4×5=20]

11. Find a polar equation for the circle $x^2+(y-3)^2 = 9$

12. Find a spherical co-ordinate equation for the sphere $x^2+y^y+(z-1)^2 = 1$

13. Find the length of cardioids $r = 1-cos\theta$

14. State Rolle's theorem and verify for $f(x)=x^2-5x+7$ in $[2,3]$

15. Find the centroid of solid with density p bounded above by the paraboloid $z = 4-x^2-y^2$ and bounded below by the disk $x^2+y^2\le 4$ in the plane z=0.

Attempt All The Questions [8×5=40]

16. Define curvature of a space curve. Find the curvature and principle unit normal vector $(\vec{N})$ of the helix $\vec{r}(t) = (a\,cost)\vec{i}+ (a\,sint)\vec{j}+ bt\vec{k}$ $(a,b \ge 0, a^2+b^2 \ne 0)$

17. Find the area in the first quadrant bounded by $y=X^{1/2}$, X-axis and y=x-2
OR
Find the local maximum, minimum and saddle point of $3x^2-2x^3+3y^2+6xy$

18. Find curvature and torsion of a space curve $\vec{r}(t) = 3\sin t\ \bar{i} + 3\cos t\ \bar{j} + 4t\ \vec{k}$

19. Find the smallest and greatest values that the function $f(x,y) = xy$ takes on the ellipse $\frac{x^2}{8} + \frac{y^2}{2} = 1$

20. Find the volume of the region D enclosed by the surfaces $z = x^2 + 3y^2$ and $z = 8 - x^2 - y^2$

DEERWALK INSTITUTE OF TECHNOLOGY			
FINAL TERM EXAMINATION, SEM I	SUBJECT	CSC- 108 STATISTICS I	SET -B
PASS MARK	24	FULL MARK	60
TIME	3 HRS	DATE	10 MARCH, 2017

INSTRUCTIONS

Students should be seated in the examination hall 10 minutes prior to the conduction of examination.
Fill in the required details carefully on the front page of the answer sheet.
Addition answer sheets should be safely stapled in order.
Malpractice observed during the examination will lead to an expulsion.
Raise your hand towards Invigilator in case you need any assistance during the examination.
Good luck and all the best.

Attempt Any Two Questions [2×10=20]

1. What do you mean by simple random sampling? In a population with N = 6 the values of Y are 5 , 3 , 8 , 7 , 1 and 4. Calculate the sample mean $\bar{y}$ for all possible simple random samples without replacement of size 2. Verify that $\bar{y}$ is an unbiased estimate of $\bar{Y}$ and s^2 is unbiased estimate of S^2.

2. Discuss the rationale and procedure of Mann Whitney U test. A researcher wants to compare the teaching standard of three English medium schools on the basis of performance of the student's final examination scores. The percentage of passers in I to IV grade in the schools are presented in the following table.

School	Grade			
	I	II	III	IV
Alpha	89	98	70	80
Sigma	45	76	40	55
Gamma	20	58	35	67

Test the performances of the schools with respect to pass percentage using Friedman's test.

3. What do you mean by multiple correlation? Describe the method of estimating parameters of multiple linear regression In order to establish the functional relationship between annual salaries(y) , years of educated high school (x₁) and years of experience with the firm (x₂), data on these three variables were collected from a random sample of 10 persons working in a large firm. Analysis of data produces the following results. Total sum of squares $\Sigma(y-\bar{y})^2 = 397.6$

Sum of squares due to error $\Sigma(y-\hat{y})^2 = 23.5$.

Test the over all significance of regression coefficients at 5% level of significance.

Attempt Any Eight Questions [8×5=40]

4. In stratified sampling using simple random sampling without replacement method in each stratum according to optimum allocation show that

$$Var(\bar{y}_{st})_{opt.} = \frac{1}{n}\left(\Sigma w_i s_i\right)^i - \frac{1}{N}\Sigma w_i s_i^i$$

5. What do you mean by stratified sampling? Prove that in SRSWOR $\bar{y}_{st}$ is an unbiased estimate of the population mean $\bar{Y}_N$.

6. What do you mean by autocorrelation? Describe method of determining the existence of autocorrelation? How do you improve your estimation if there is a problem of autocorrelation?

7. What do you mean by heteroscedasticity? Mention reasons of heteroscedasticity. Describe removal process of heteroscedasticity

8. What do you mean by multiple correlation? How is it different from coefficient of multiple determination? Write down the relationship between multiple correlation coefficient and simple correlation coefficients. The following are zero order correlation coefficients $r_{12} = 0.8$, $r_{13} = 0.44$, $r_{23} = 0.54$. Calculate the partial correlation coefficient between first and third variables keeping the effect of second variable constant .

9. Describe Cobb Douglas production function with it's application.

10. Seven prospective graduate students took a test twice with the following scores.

First attempt	470	530	610	440	600	590	580
Second attempt	510	550	600	490	585	620	598

Test whether there is significant difference between scores in first attempt and second attempt using Wilcoxon Matched pair signed rank test.

11. The distribution of persons according to sex and blood groups are given below:

Sex	Blood group			
	O	A	B	AB
Male	100	40	45	10
Female	110	35	55	5

Is there any association between sex and blood group?

12. Discuss the function and procedure of Kruskal Wallis H test.

13. Describe the rationale and procedure of Kolmogorov Smirnov one sample test.

DEERWALK INSTITUTE OF TECHNOLOGY

FINAL TERM EXAMINATION, SEM I		SUBJECT	DWIT- 031 PROGRAMMING BASICS
PASS MARK	24	FULL MARK	60
TIME	3 HRS	DATE	13 MARCH, 2017

INSTRUCTIONS

Students should be seated in the examination hall 10 minutes prior to the conduction of examination.
Fill in the required details carefully on the front page of the answer sheet.
Do not scribble on the question paper.
Addition answer sheets should be safely stapled in order.
Malpractice observed during the examination will lead to an expulsion.
Raise your hand towards Invigilator in case you need any assistance during the examination.
Good luck and all the best.

Attempt Any Two Questions [10×2=20]

1. Write HTML & CSS code to display following output.

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

2. Write HTML & CSS code design form below:

Contact Form

First Name

Last Name

Country
Australia

Subject

Submit

3. What are the different ways to give style to a Web Page? Explain with examples.

Attempt Any Five Questions [8×5=40]

4. What is HTML? Explain five different HTML Tags.

5. Explain HTML div and span tag with example.

6. What is CSS? Explain advantages of CSS.

7. Write HTML code to display the following table.

Firstname	Lastname	Countrt
Wayne	Rooney	England
KungFu	Panda	China
Sachin	Tendulkar	India

8. What is the difference between ID Selector and Class? Explain with a example.

9. What are the advantages of External over Inline style methods?

10. Write short notes on any two:

    1. Padding & Margin

    2. CSS

    3. Float Property of CSS