MES COLLEGE ERUMELY

QUESTION PAPER

INTERNAL EXAMINATION

M E S COLLEGE, ERUMELY

3rd Semester B.Sc. Electronics (CBCSS) Model Examination

MATHEMATICS – NUMERICAL METHODS

Time: 3 Hours Max. Mark: 80

PART A

Answer all questions. Each question carries 1 mark.

1. What is precision of 4.3201?
2. What are inherent errors?
3. How is relative error in defined?
4. State an elimination method to solve the systems.
5. What is curve fitting?
6. What are piece wise polynomials.
7. Write Newton form of n^{th} order polynomial.
8. What is numerical differentiation?
9. Write the iterative equation in Picard's method.
10. Write false position formula.

PART B

Answer any 8 questions. Each question carries mark 2

11. Compute condition number for $f(x) = \sqrt{x-1}$
12. Write any 2, imitations of Newton Ramphson method.
13. What are the four possible solution conditions of a system of linear equations?
14. What is back substitution phase in basic Gauss elimination methods?
15. Solve the system of equations.
    $x+y=2,\ 2x-y=1$
16. What is Boole's Rule?
17. What is 5 point central different formula for I derivative.
18. Define machine epsilon.
19. Explain the term divided difference.
20. What is polygon method for solving D.E?
21. State the linear interpolation formula.
22. What is meant by ill conditioned system?

PART C

Answer any 6 questions. Each question carries 4 marks

23. Find a positive root of $x^2-3=0$ using bisection method (up to 2 decimals)

24. Derive Newton – Ramphson formula using Taylor series expansion.

25. Find *f(3)* if

x :	2	5	8
f(x):	3	7	10

26. $\int_{-1}^{1} e^x \, dx$ Using 4 intervals.

27. Use simpson's 3/8 rule to evaluate $\int_1^2 (x^3 + 1) dx$

28. Solve $y^1(x) = x.\, e^{\,y}$, $y(0)=0$ by Picard's method.

29. Fit a straight line to the following data.

x	:	1	2	3	4	5
y	:	3	4	5	6	8

30. Use 2nd order Newton interpolation polynomial to estimate log 2.5

i	:	0	1	2	3
x	:	1	2	3	4
logx	:	0	0.3010	0.4771	0.6021

31. Use Euler's method to solve $y= 3x^2 +1$ with $y(1) =2$. Estimate $h=0.5$

PART D

Answer any 2 questions. Each question carries 15 marks

32. Solve the system using Jacobc's iteration method.

$$2x_1 + x_2 + x_3 = 5$$
$$3x_1 + 5x_2 + 2x_3 = 15$$
$$2x_1 + x_2 + 4x_3 = 8$$

33. Find Langrage interpolation polynomial to fit the following data.

xi	:	0	1	2	3
e^{xi}-1	:	0	1.7183	6.3891	19.0855

34. Use classical R.K.Method to estimate y(0.5) of the equation $\frac{dy}{dx} = x + y,\ y(0) = 1$ with $h = 0.25$

35. Use the Secant method to estimate the root of equation $x^2-4x - 10 =0$ with initial estimate $x_1=4$ and $x_2=2$

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12/4/19

MES College Erumely

B.Sc. Degree Second Internal Examination.

Second Semester

Mathematics: Linear Algebra and Differential Equations

Time : 3 hrs Max. Marks : 80

Part –A

Answer any ten questions. Each carries 2 marks.

1. Define a vector space.
2. Determine whether (1, -3) and (-2,6) are linearly independent or not.
3. Find the dimensions of the vector space spanned by (1, 2, 0) and (1, 3, 0)
4. Define (i) Hermitian matrix (ii) skew Hermitian matrix.
5. Find the adjoint of $\begin{bmatrix} 1 & 0 & 0 \\ 1 & 1 & 0 \\ 1 & 3 & 2 \end{bmatrix}$
6. What are the possible values of the determinant of an orthogonal matrix.
7. Write a characteristic equation of $\begin{bmatrix} 1 & 0 \\ 3 & 4 \end{bmatrix}$
8. Test whether $\begin{bmatrix} 1 \\ 1 \end{bmatrix}$ is an eigen vector of the matrix $\begin{bmatrix} 3 & 1 \\ 2 & 2 \end{bmatrix}$
9. State Cayley Hamilton theorem
10. Solve $\frac{dy}{dx} = \frac{x}{y}$
11. Solve $\frac{dy}{dx} + 2y = 3,\ y(0) = 1$
12. Form the partial differential equation by eliminating the arbitrary constants of the equation.

$$z = ax + by + a^2 + b^2$$

(10x2=20)

Part –B

Answer any six questions. Each carries 5 marks.

13. Test whether the vectors (1,0,1), (1,1,1) and (1, 1, 2) are linearly independent.
14. Suppose F: $R^3 \rightarrow R^2$ defined by
    F(x,y,z) = (x+y+z, 2x-3y+4z) show that F is linear.
15. Find the rank of the matrix $\begin{bmatrix} 1 & 2 & 0 \\ 1 & 1 & 3 \\ 1 & 1 & 0 \end{bmatrix}$
16. Find the inverse of $\begin{bmatrix} 1 & 2 & 1 \\ 1 & 1 & 3 \\ 1 & 1 & 0 \end{bmatrix}$

17. Show that A= $A=\frac{1}{3}\begin{bmatrix}1-2i & 2i\\ -2i & -1-2i\end{bmatrix}$ is unitary.

18. Solve the system of equations.

x+y+z=1

x+y=1

y+z=?

19. Write the nature of characteristic roots of

(i) Diagonal matrix

(ii) Hermitian matrix

(iii) Unitary Matrix

20. Solve the differential equation.

$$\frac{dx}{x(y-z)}=\frac{dy}{y(z-x)}=\frac{dz}{z(x-y)}$$

21. Solve $\frac{dy}{dx}+y\tan x=\cos^3 x$

(6x5=30)

Part –C

Answer any two question. Each carries 15 marks.

22. (a) Show that (1,0,0), (0, 2,0), (1,2,3) is a basis of R^3.

(b) Find the matrix of transformation of T: $R^3 \rightarrow R^2$ defined by T(x,y,z) = (x, x+y, x+y+z)

23. Find the Eigen values and Eigen vectors of the matrix.

$$\begin{bmatrix}4 & 1 & 1\\ 2 & 5 & -2\\ 1 & 1 & 2\end{bmatrix}$$

24. a) Reduce the matrix $\begin{bmatrix}1 & -1 & 0\\ 1 & 2 & 0\\ 3 & 4 & 1\end{bmatrix}$ to echelon form

b) Reduce $\begin{bmatrix}3 & 4 & 0\\ 2 & 0 & 1\\ 1 & 1 & 2\end{bmatrix}$ to normal form

25. (a) Solve the differential equation.

$(2xy - 9x2) + (2g + x^2)\frac{dy}{dx} = 0,\ y(0) = -3$

(b) solve (mz-ny)p +(nx-/z)q = ly-mx

(2x15=30)

MES COLLEGE ERUMELY

BCA (CBCSS) DEGREE 2ND INTERNAL EXAMINATION
FIRST SEMESTER

DISCRETE MATHEMATICS

Time : 3 Hrs **Max Marks : 80**

PART A

ANSWE ANY 10 QUESTIONS. 2 MARKS EACH.

1. Write down the truth table for the conditional statement $p \rightarrow q$
2. Translate the following sentence into a logical expression.
   "The automated reply cannot the sent when the file system is full"
3. Define power set. What is the power set of empty set.
4. Let Ai ={1, 2, 3, ...i) for i= 1,2,3,..... Find
   (i) $\bigcup_{i=1}^{n} Ai$ (ii) $\bigcap_{i=1}^{n} Ai$
5. Let f and g be the function from the set of integers of the set of integers defined by f(x)= 2x + 3 and g(x)= 3x + 2. What is the composition of the f a1nd g. What is the composition of g and f.
6. What are the quotient and remainder when -11 is divided by 3
7. What letter replaces the letter K when the function f(p) = 7P+3 mod 26 is used for encryption.
8. Define Pseudo prime to the base b.
9. Draw a directed graph with vertices a, b, c and d and edges (a,b), (a,d), (b,b), (b,d), (c,a), (c,b) and (d,b)
10. S= {1, 2, 3, 4, 5, 6} Check whether A1 = {1, 2, 3}, A2= {4,5} and A3 ={6} form a partition of S.
11. Define a poset with example.
12. Define universal quantifiers.

PART B

ANSWER ANY 6.FIVE MARK EACH.

13. Define prime and composite numbers. Prove that there are infinitely many primes.
14. Verity that the proposition (p^q) ^~(pvq) is a contradiction.
15. Draw the graphs of floor and ceiling functions.
16. Express gcd (252, 198) = 18 as a linear combination of 252 and 198.

17. What are the solutions of the linear congruence $3x \equiv 4 \pmod 7$

18. Is the relation R={(1,1), (1,2), (1,4), (2,1), (22), (3,3), (4,1), (4,4)} on {1, 2, 3, 4} is reflexive and symmetric.

19. Define an equivalence relation. Let R be the relation on the set of real numbers such that aRb if and only if a−b is an itnerger. Is R an equivalence relation.

20. Let m be positive integer with m>1. Show that the relation R={(a,b) / a ≡ b mod m} is an equivalence relation on the set of integers.

21. Define conjunctive normal form and disjunctive normal form.

PART – C

ANSWER ANY TWO. 15 MARKS EACH

22. (a) Draw the Hasse diagram for the partial ordering {(a,b) / a divides b} on {1, 2, 3, 4, 6, 8, 12}

(b) Determine whether the relation represented by the following matrix is equivalence relation.

$$\begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \\ 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \end{bmatrix}$$

23. i) State the theorems from Boolean Algebra.

ii) By resolution rule prove ~PvQ, ~QvR, R →S ⊢P→S

24. a) Show that 15 is an inverse of 7 modulo 26

b) Express the greatest common deviser of (101, 203) as a linear combination of these integers.

25. a) Determine whether the following function is a bijection from R to R.

$F(x) = 2x+1$.

b) Show that if A, B and C are sets, then $= \overline{A \cap B \cap C} = \bar{A} \cup \bar{B} \cup \bar{C}$

MES COLLEGE ERUMELY

3rd Semester B.Sc Electronics 2nd Internal Examinations

Probability and Statistics

Time:3hrs Max marks: 80

Part A

Answer any 10 questions. Each has 2marks

1. Define primary data and secondary data.
2. Define Ogives
3. Write the formulae of Coefficient of Skewness and Coefficient of Kurtosis .
4. Define simple random sampling .
5. What is a random variable ?
6. Define PossoinDistribution .
7. Define Medlan .
8. Define parameter and Statistics .
9. Define Type 1 error.
10. What do you mean by Correlation analysis ?
11. What is coefficient of determination ?
12. Where the regression lines meet ?

Part - B

Answer any 6 questions.Each has 5 marks

13. What are the main steps of Statistical enquiry ?

14. Draw Lessthanogive and GreaterthanOgive and hence find Median .

Marks	0 - 10	10-20	20-30	30-40	40-50	50-60
No.of students	12	18	27	20	17	6

15. If P(A)= 1/13 ,P (B) =1/4 and P(A U B) =4/13 . Find 1] P(A B) 2)P(A/B) 3) P(B/A)

16. The weekly wages of 1000 workmen are Normally distributed with Mean = 70 and SD = 5 . Find the number of workers whose wage is between 69 and 72 .
17. A sample of 900 items has a mean of 3.4 cms.Can it be regarded as a sample taken from a population with mean=3.25 cms and SD=1.61 cms
18. Write down the procedure of Testing of Hypothesis .

19.

Find the Correlation Coefficient

x	2	4	6	8	10
y	5	7	9	8	11

20. Find Regression equation of Y on X

x	3	1	4	7	8	9
y	4	2	3	6	5	8

21. Comment on the following results.For a bivariate data 1)Coefficient of regression of y on x is 4.2 and that of xony is 0.5 2) bxy = -0.82 and bxy = 0,5

Part – C

Answer any 2 questions .each has 15 marks

22. Define Census and Sampling . Explain different methods of Sampling .

23. Find Mean ,SD and Coefficient of variation for the following data .

Marks	0-10	10 - 20	30-40	40-90	50-60	60-70	70-80
f	2	4	8	6	5	7	8

24. Find Rank Correlation Coefficient

x	80	45	55	58	55	60	45	68	70	45	35
y	82	56	50	43	56	62	64	65	70	64	90

25. In a partially destroyed record of an analysis of correlation the following results only are legible .Variance of x=9.Regression equations are 8x -10y + 66 =0, 40x -18y=214 . Find 1)The mean values of x and y 2) The coefficient correlation 3) Standard deviation of y

M E S COLLEGE, ERUMELY

III Semester BCA Second Internal Examination

ADVANCED STATISTIACAL METHODS

Time: 3 Hours Max marks: 80

Part A

Answer any10 questions. Each question carries 2 marks.

1. Define significant level of a Statistical test
2. A fair coin is tossed 5 times, find the chance of getting 3 heads.
3. Define moment generating function.
4. The S.D. of a Poisson variate is 2. What is the mean of the Poisson variate?
5. If X follows binomial distribution B(n, P) with parameter n and p, what is the probability distribution function ? What are the mean and variance?
6. Define a parametric hypothesis. Give an example.
7. Define standard error. What are the standard errors of mean of a large sample and a small sample?
8. What are estimate and estimator?
9. What do you mean by a contingency table?
10. What is Type 1 error and Type 2 error?
11. What is a null hypothesis and an alternative hypothesis?
12. What do you mean by a parameter and a statistic? Give an example of each.

Part B

Answer any Six questions. Each question carries 5 marks.

13. What are the desirable properties of a good estimate?
14. Explain the procedure of testing of hypothesis.
15. Construct a confidence interval for variance of normal distribution.
16. If X follows Normal distribution with mean 50 and SD 5.

    Find a) $P(X \geq 58)$

    b) $P(40 \leq X \leq 55)$
17. Out of 500 items selected for inspection 0.2% are found to be defective. Find how many lots will contain exactly no defective if there are 1000 lots.
18. A manufacturer of dry cells claimed that the life of their cells is 24hrs. A sample of cells had mean life of 22.5 hrs. with a S.D. of 3 hrs. On the basis of this information construct a hypothesis and a procedure for testing the hypothesis.

19.Define

(i) Sampling distribution

(ii) Two tail test

(iii) State Neyman - Pearson approach.

20.In a sample of 500 people in Kerala 280 are tea drinkers. Can we assume that both coffee and tea are equally popular in this state at 1% level of significance?

21.What are the uses of Chi-square test?

Part C

Answer any two questions. Each question carry 15 marks.

22.a) Define F - distribution.

b) Explain the relationship between Chi-square, t and f distribution.

23.a) Explain the procedure for testing equality of two population means.

b) The mean life of 100 tube lights produced by a company is 1570 hours with th standard deviation of 120 hours. The company claims that the average life of tubes produced by the company is 1600 hours. Is the claim valid?

24.For a normally distribution population 7% of the items have their values less than 35 and 87% have their values less than 63.Find the mean and S.D of the distribution.

25.. The result of a survey to know the educational attainment among 164 persons randomly selected in a locality are given below. Can you state that education depends on gender?

Education	Middle	High School	College	Total
Male	52	10	20	82
Female	44	12	26	82
Total	96	22	46	164

BBA DEGREE (CBCSS) EXAMINATION

First Semester

Fundamentals of Business Mathematics

Time : Three Hours *Maximum marks : 80 marks*

PART –A
Answer any 10 questions. 2 marks each

1. Define a composite number.
2. If A= {2, 3, 4} and B = {3, 4, 8}, find A-B
3. If $x \propto y$ and x-4 when y=6, find the relation between x and y. Find the value of x when y = 27
4. Find x if $\log_2^x = 6$
5. Find the rank of $\begin{bmatrix} 2 & -1 \\ 6 & 5 \end{bmatrix}$
6. *Find in how many ways a cricket team containing 11 players can be formed from* 15 high class players available.
7. Find the amount that Rs. 100 will become after 20 years of compound interest at 5% calculated annually.
8. If A= {a, b}, find A X A
9. Define symmetric matrix. If $A = \begin{bmatrix} 2 & 3 & 4 \\ 3 & 0 & a \\ 4 & -9 & 5 \end{bmatrix}$ is symmetric, find a.
10. If a+b : a-b = 5:2, find b:a
11. 5 men can dig a well in 12 days. In how many days 12 men can dig the well.
12. If $P = \begin{bmatrix} 1 & -1 \\ 2 & 3 \end{bmatrix}$ and $Q = \begin{bmatrix} -5 & 6 \\ 2 & 1 \end{bmatrix}$ find 2P +Q

(10x2=20)

Part B
Answer any six questions. 5 marks each.

13. If U = {1,2, 3, 4, 5, 6, 7, 8}, A = {1,2,3,4}, B= {2, 4, 6} compute,

    (i) $A' - B'$ (ii) $(A \cap B)'$

14. Ages of two people are in the ratio 3:4 after 10 years then ages would be in the ratio 4:5. Find their ages.
15. Prove that $\begin{bmatrix} 3 & 4 & 2 \\ 0 & 1 & -3 \\ 2 & -2 & 8 \end{bmatrix}$ is non singular.

16. Find the inverse of $\begin{bmatrix} 1 & 4 & 5 \\ 3 & 2 & 2 \\ 4 & 1 & -3 \end{bmatrix}$

17. Evaluate using logarithm $(25.34)^2 \times (424)^{2/5}$

18. 10 examination papers are arranged in such a way that the best and the worst papers come together. What is number of arrangements.

19. Find the compound interest for Rs. 5000 for 3 years at 10% p.a.

20. Calculate $\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$ $[2 \quad 3 \quad 4 \quad 5]$

21. Define rational and irrational numbers with examples.

(6x5=30)

Part – C

Answer any two questions. 15 marks each.

22. Solve by cramer's rule

$$2x - 3y + 5z = 11$$
$$5x + 2y - 7z = -12$$
$$-4y + 3y + z = 5$$

23. If A = {a,b}, B= {p,q}, C= (q,r), verity A x (BUC) = (A X B) U (A X C)

24. Verify that A(adj.A) = (adj A) A = |A| I, if $A = \begin{bmatrix} 1 & 4 & 5 \\ 3 & 2 & 2 \\ 0 & 1 & -3 \end{bmatrix}$

25. Prove that $7\log\left(\frac{16}{15}\right) + 5\log\frac{25}{24} + 3\log\frac{81}{80} + \log\frac{1}{2} = 0$

(2 x 15 = 30)

12/4/19

MES College Erumely

B.Sc. Degree Second Internal Examination.

Second Semester

Mathematics: Linear Algebra and Differential Equations

Time : 3 hrs Max. Marks : 80

Part –A

Answer any ten questions. Each carries 2 marks.

1. Define a vector space.
2. Determine whether (1, -3) and (-2,6) are linearly independent or not.
3. Find the dimensions of the vector space spanned by (1, 2, 0) and (1, 3, 0)
4. Define (i) Hermitian matrix (ii) skew Hermitian matrix.
5. Find the adjoint of $\begin{bmatrix} 1 & 0 & 0 \\ 1 & 1 & 0 \\ 1 & 3 & 2 \end{bmatrix}$
6. What are the possible values of the determinant of an orthogonal matrix.
7. Write a characteristic equation of $\begin{bmatrix} 1 & 0 \\ 3 & 4 \end{bmatrix}$
8. Test whether $\begin{bmatrix} 1 \\ 1 \end{bmatrix}$ is an eigen vector of the matrix $\begin{bmatrix} 3 & 1 \\ 2 & 2 \end{bmatrix}$
9. State Cayley Hamilton theorem
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11. Solve $\frac{dy}{dx} + 2y = 3,\ y(0) = 1$
12. Form the partial differential equation by eliminating the arbitrary constants of the equation.

$$z = ax + by + a^2 + b^2$$

(10x2=20)

Part –B

Answer any six questions. Each carries 5 marks.

13. Test whether the vectors (1,0,1), (1,1,1) and (1, 1, 2) are linearly independent.
14. Suppose F: $R^3 \rightarrow R^2$ defined by
    F(x,y,z) = (x+y+z, 2x-3y+4z) show that F is linear.
15. Find the rank of the matrix $\begin{bmatrix} 1 & 2 & 0 \\ 1 & 1 & 3 \\ 1 & 1 & 0 \end{bmatrix}$
16. Find the inverse of $\begin{bmatrix} 1 & 2 & 1 \\ 1 & 1 & 3 \\ 1 & 1 & 0 \end{bmatrix}$

17. Show that A= $A=\frac{1}{3}\begin{bmatrix}1-2i & 2i\\ -2i & -1-2i\end{bmatrix}$ is unitary.

18. Solve the system of equations.

x+y+z=1

x+y=1

y+z=?

19. Write the nature of characteristic roots of

(i) Diagonal matrix

(ii) Hermitian matrix

(iii) Unitary Matrix

20. Solve the differential equation.

$$\frac{dx}{x(y-z)}=\frac{dy}{y(z-x)}=\frac{dz}{z(x-y)}$$

21. Solve $\frac{dy}{dx}+y\tan x=\cos^3 x$

(6x5=30)

Part –C

Answer any two question. Each carries 15 marks.

22. (a) Show that (1,0,0), (0, 2,0), (1,2,3) is a basis of R^3.

(b) Find the matrix of transformation of T: $R^3 \rightarrow R^2$ defined by T(x,y,z) = (x, x+y, x+y+z)

23. Find the Eigen values and Eigen vectors of the matrix.

$$\begin{bmatrix}4 & 1 & 1\\ 2 & 5 & -2\\ 1 & 1 & 2\end{bmatrix}$$

24. a) Reduce the matrix $\begin{bmatrix}1 & -1 & 0\\ 1 & 2 & 0\\ 3 & 4 & 1\end{bmatrix}$ to echelon form

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FIRST SEMESTER

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PART B

ANSWER ANY 6.FIVE MARK EACH.

13. Define prime and composite numbers. Prove that there are infinitely many primes.
14. Verity that the proposition (p^q) ^~(pvq) is a contradiction.
15. Draw the graphs of floor and ceiling functions.
16. Express gcd (252, 198) = 18 as a linear combination of 252 and 198.

17. What are the solutions of the linear congruence $3x \equiv 4 \pmod 7$

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21. Define conjunctive normal form and disjunctive normal form.

PART – C

ANSWER ANY TWO. 15 MARKS EACH

22. (a) Draw the Hasse diagram for the partial ordering {(a,b) / a divides b} on {1, 2, 3, 4, 6, 8, 12}

(b) Determine whether the relation represented by the following matrix is equivalence relation.

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23. i) State the theorems from Boolean Algebra.

ii) By resolution rule prove ~PvQ, ~QvR, R →S ⊢P→S

24. a) Show that 15 is an inverse of 7 modulo 26

b) Express the greatest common deviser of (101, 203) as a linear combination of these integers.

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MES COLLEGE ERUMELY

3rd Semester B.Sc Electronics 2nd Internal Examinations

Probability and Statistics

Time:3hrs Max marks: 80

Part A

Answer any 10 questions. Each has 2marks

1. Define primary data and secondary data.
2. Define Ogives
3. Write the formulae of Coefficient of Skewness and Coefficient of Kurtosis .
4. Define simple random sampling .
5. What is a random variable ?
6. Define PossoinDistribution .
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10. What do you mean by Correlation analysis ?
11. What is coefficient of determination ?
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Part - B

Answer any 6 questions.Each has 5 marks

13. What are the main steps of Statistical enquiry ?

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Marks	0 - 10	10-20	20-30	30-40	40-50	50-60
No.of students	12	18	27	20	17	6

15. If P(A)= 1/13 ,P (B) =1/4 and P(A U B) =4/13 . Find 1] P(A B) 2)P(A/B) 3) P(B/A)

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18. Write down the procedure of Testing of Hypothesis .

19.

Find the Correlation Coefficient

x	2	4	6	8	10
y	5	7	9	8	11

20. Find Regression equation of Y on X

x	3	1	4	7	8	9
y	4	2	3	6	5	8

21. Comment on the following results.For a bivariate data 1)Coefficient of regression of y on x is 4.2 and that of xony is 0.5 2) bxy = -0.82 and bxy = 0,5

Part – C

Answer any 2 questions .each has 15 marks

22. Define Census and Sampling . Explain different methods of Sampling .

23. Find Mean ,SD and Coefficient of variation for the following data .

Marks	0-10	10 - 20	30-40	40-90	50-60	60-70	70-80
f	2	4	8	6	5	7	8

24. Find Rank Correlation Coefficient

x	80	45	55	58	55	60	45	68	70	45	35
y	82	56	50	43	56	62	64	65	70	64	90

25. In a partially destroyed record of an analysis of correlation the following results only are legible .Variance of x=9.Regression equations are 8x -10y + 66 =0, 40x -18y=214 . Find 1)The mean values of x and y 2) The coefficient correlation 3) Standard deviation of y

M E S COLLEGE, ERUMELY

III Semester BCA Second Internal Examination

ADVANCED STATISTIACAL METHODS

Time: 3 Hours Max marks: 80

Part A

Answer any10 questions. Each question carries 2 marks.

1. Define significant level of a Statistical test
2. A fair coin is tossed 5 times, find the chance of getting 3 heads.
3. Define moment generating function.
4. The S.D. of a Poisson variate is 2. What is the mean of the Poisson variate?
5. If X follows binomial distribution B(n, P) with parameter n and p, what is the probability distribution function ? What are the mean and variance?
6. Define a parametric hypothesis. Give an example.
7. Define standard error. What are the standard errors of mean of a large sample and a small sample?
8. What are estimate and estimator?
9. What do you mean by a contingency table?
10. What is Type 1 error and Type 2 error?
11. What is a null hypothesis and an alternative hypothesis?
12. What do you mean by a parameter and a statistic? Give an example of each.

Part B

Answer any Six questions. Each question carries 5 marks.

13. What are the desirable properties of a good estimate?
14. Explain the procedure of testing of hypothesis.
15. Construct a confidence interval for variance of normal distribution.
16. If X follows Normal distribution with mean 50 and SD 5.

    Find a) $P(X \geq 58)$

    b) $P(40 \leq X \leq 55)$
17. Out of 500 items selected for inspection 0.2% are found to be defective. Find how many lots will contain exactly no defective if there are 1000 lots.
18. A manufacturer of dry cells claimed that the life of their cells is 24hrs. A sample of cells had mean life of 22.5 hrs. with a S.D. of 3 hrs. On the basis of this information construct a hypothesis and a procedure for testing the hypothesis.

19.Define

(i) Sampling distribution

(ii) Two tail test

(iii) State Neyman - Pearson approach.

20.In a sample of 500 people in Kerala 280 are tea drinkers. Can we assume that both coffee and tea are equally popular in this state at 1% level of significance?

21.What are the uses of Chi-square test?

Part C

Answer any two questions. Each question carry 15 marks.

22.a) Define F - distribution.

b) Explain the relationship between Chi-square, t and f distribution.

23.a) Explain the procedure for testing equality of two population means.

b) The mean life of 100 tube lights produced by a company is 1570 hours with th standard deviation of 120 hours. The company claims that the average life of tubes produced by the company is 1600 hours. Is the claim valid?

24.For a normally distribution population 7% of the items have their values less than 35 and 87% have their values less than 63.Find the mean and S.D of the distribution.

25.. The result of a survey to know the educational attainment among 164 persons randomly selected in a locality are given below. Can you state that education depends on gender?

Education	Middle	High School	College	Total
Male	52	10	20	82
Female	44	12	26	82
Total	96	22	46	164

BBA DEGREE (CBCSS) EXAMINATION

First Semester

Fundamentals of Business Mathematics

Time : Three Hours *Maximum marks : 80 marks*

PART –A
Answer any 10 questions. 2 marks each

1. Define a composite number.
2. If A= {2, 3, 4} and B = {3, 4, 8}, find A-B
3. If $x \propto y$ and x-4 when y=6, find the relation between x and y. Find the value of x when y = 27
4. Find x if $\log_2^x = 6$
5. Find the rank of $\begin{bmatrix} 2 & -1 \\ 6 & 5 \end{bmatrix}$
6. *Find in how many ways a cricket team containing 11 players can be formed from* 15 high class players available.
7. Find the amount that Rs. 100 will become after 20 years of compound interest at 5% calculated annually.
8. If A= {a, b}, find A X A
9. Define symmetric matrix. If $A = \begin{bmatrix} 2 & 3 & 4 \\ 3 & 0 & a \\ 4 & -9 & 5 \end{bmatrix}$ is symmetric, find a.
10. If a+b : a-b = 5:2, find b:a
11. 5 men can dig a well in 12 days. In how many days 12 men can dig the well.
12. If $P = \begin{bmatrix} 1 & -1 \\ 2 & 3 \end{bmatrix}$ and $Q = \begin{bmatrix} -5 & 6 \\ 2 & 1 \end{bmatrix}$ find 2P +Q

(10x2=20)

Part B
Answer any six questions. 5 marks each.

13. If U = {1,2, 3, 4, 5, 6, 7, 8}, A = {1,2,3,4}, B= {2, 4, 6} compute,

    (i) $A' - B'$ (ii) $(A \cap B)'$

14. Ages of two people are in the ratio 3:4 after 10 years then ages would be in the ratio 4:5. Find their ages.
15. Prove that $\begin{bmatrix} 3 & 4 & 2 \\ 0 & 1 & -3 \\ 2 & -2 & 8 \end{bmatrix}$ is non singular.

16. Find the inverse of $\begin{bmatrix} 1 & 4 & 5 \\ 3 & 2 & 2 \\ 4 & 1 & -3 \end{bmatrix}$

17. Evaluate using logarithm $(25.34)^2 \times (424)^{2/5}$

18. 10 examination papers are arranged in such a way that the best and the worst papers come together. What is number of arrangements.

19. Find the compound interest for Rs. 5000 for 3 years at 10% p.a.

20. Calculate $\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$ $[2 \quad 3 \quad 4 \quad 5]$

21. Define rational and irrational numbers with examples.

(6x5=30)

Part – C

Answer any two questions. 15 marks each.

22. Solve by cramer's rule

$$2x - 3y + 5z = 11$$
$$5x + 2y - 7z = -12$$
$$-4y + 3y + z = 5$$

23. If A = {a,b}, B= {p,q}, C= (q,r), verity A x (BUC) = (A X B) U (A X C)

24. Verify that A(adj.A) = (adj A) A = |A| I, if $A = \begin{bmatrix} 1 & 4 & 5 \\ 3 & 2 & 2 \\ 0 & 1 & -3 \end{bmatrix}$

25. Prove that $7\log\left(\frac{16}{15}\right) + 5\log\frac{25}{24} + 3\log\frac{81}{80} + \log\frac{1}{2} = 0$

(2 x 15 = 30)

MES COLLEGE ERUMELY

SECOND SEMESTER MA DEGREE(CSS)MODEL EXAMINATION

CORE-EN01025-THINKING THEORY

Time:3Hours

Weightage:30

Part A (Short Answer Questions) Answer any Eight Questions Weight 1 each

1. What is the relation of Myth to the concepts of langue and parole?
2. Significance of the Preface to 'Kubla Khan'Define
3. Mytheme.
4. Coherence in Contradiction is basically the definition of -Myth- Why does Derrida say so?
5. How does Foucault approach the changed notion of an author?
6. What does Nicholas Abraham find constitutive of the continuing relevance of Hamlet?
7. Why according to Barbara Christian have black critical writers of the previous decades been ignored?
8. How does Julia Kristeva approaches the theme Abjection In "Approaching Abjection"
9. According to Levi Strauss, Why is Myth unlike Poetry?
10. How does Eve Sedgewick distinguish 'strong and weak' theories?

Part B Answer any six, Weight 2 each

11 Why is the Essay The Structural Study of Myth significant?

12.How does Robert Young establish the primacy of the reader?

13.What does it mean to say that the author precedes his/her book?What interpretations of the artistic process does it remove?

14.How does Psychoanalysis undertake the dissipation of the Phantom in Hamlet? Why?

15.What does Stuart Hall imply by referring to Gramsci's work as a form of 'Open Marxism'?

16.How according to Eve Sedgwick does paranoia become anticipatory?

17.Analyse Barbara Christians "The Race for Theory"

Part C(Essay Type Questions) Answer any two-Weight 2 each

18. Summarise the core concepts of Theory put forward in the essay"What is Theory

19.In a Text, is it not the Author who speaks-Discuss with reference to Barthes and Foucault?

20Nicholas Abraham's reconsideration of the supernatural in Hamlet supports the notion of art as criticism.Explain the Psychoanalytic domains in the play.

21.Consider bell hooks"Marginality as a site of Resistance as a negotiation of the Self and Others Marginal"

MES COLLEGE ERUMELY

FIRST SEMESTER MA DEGREE EXAMINATION

EN010101-UP UNTIL CHAUCER: EARLY LITERATURES IN ENGLISH

Max Weight:30 Time:3hrs

Part A(Short Answer Questions) Answer any eight,weight 1 each

1.What is the moral of “Deor’s Lament”?
2.What is the theme of Caedmon’s Songs?
3.Write Short notes on Riddles in Exeter Book.
4.How is the movement Explored in “The Vision of Piers Plowman”?
5.Write Short note on the history of Anglo Saxon England.
6.What is the significance of King Arthur’sdream in Book 5 of Le Morte D’ Arthur?
7.How does Sir Orfeo transform Orpheus Myth?
8.In the Dream of Rood what does the Cross want to do when it first sees Christ?
9.Write Short note on Julian Norwich”s God as mother and our Language for God critique the patriarchy inherent in the languages of Bible.
10.What is the significance of King Arthur’s dream in Book 5 of Le Morte D’ Arthur?

PartB(Short Essay Questions) Answer any six questions.Weight 2 each

11.Discuss Chaucer’s Narrative art with special reference to the Canterbury Tales.
12.Explain the revelation of Caedmon..
13.Describe the atmosphere of Herot the evening after the fight , culminating with everyone going to bed in part 18 of Beowulf.14.
14.Explain famous legends on the Germanic times used in Deor’s Lament.
15.Compare and contrast Husband's Message with wife’s Lament
16.Wife of Bath’s Prologue is a Tale on its own. Discuss
17.Explain the punishment given to the knight in the Wife of Bath's tale.
18.Analyse Piers the Plowman as a dream Allegory

PartC(Essay Type Questions) Answer any two questions, Weight 2 each

19.Comment on Wife of Bath’s opinion on Virginity and Multiple Marriages.
20.What was the significance of King Alfred’s Preface to the Pastoral Care.
21.Compare/Contrast the original myth of Narcissus with the version John Gower gives..
22.In the Dream of Rood, how exactly, does the Author make Christianity and the figure of Christ appealing to the Warrior culture

MES COLLEGE ERUMELY

BCA MODEL EXAMINATION

Third Semester

CA3CRT01 - MICROPROCESSOR AND PC HARDWARE

Time: 3 Hours **Max. Marks: 80**

Part A

*Answer any **ten** questions. Each question carries **2** marks*

1. Define microprocessor.
2. Differentiate between maskable and nonmaskable interrupts.
3. What are interrupts of Intel 8085?
4. Explain instruction format of 8085?
5. What is the need of motherboard in your system?
6. What is meant by co-processor?
7. Write about super I/O chip.
8. How can we select a motherboard?
9. Write briefly about high level formatting.
10. What is FAT?
11. What is NTFS?
12. Write the advantages of RIMM over other types of memory modules

Part B

*Answer any **six** questions. Each question carries 5 marks*

13. How the instruction and data flow carried out in 8085 microprocessor? Explain.
14. What is meant by data transfer group of the Intel 8085 instruction set? Explain with suitable instructions.
15. Explain different move instructions with examples.
16. Write about USB.
17. What is POST and Bootstrap loader? Explain.
18. Differentiate between memory bus and processor bus.
19. Explain different read/write heads.
20. Describe the HD features.
21. Write note on extended memory.

Part C

*Answer any **two** questions. Each question carries 15 marks*

22. Draw the block diagram and explain the components of Intel 8085.
23. Discuss about each group of instruction set of Intel 8085 microprocessor with examples.
24. Explain the hard disk operations.
25. Discuss about each one (a) Conventional memory (b) UMA (c) HMA

MES COLLEGE ERUMELY

MODEL EXAMINATIONS

I SEMESTER BCA DEGREE (CBCSS) EXAMINATION APRIL 2021

CA1CRT01: Computer Fundamentals and Digital Principles (Core)

PART A

(Attend any 10 questions, each question carry 2 marks)

1. What is the difference between data and information?
2. List the four parts of a computer system.
3. What is the octal equivalent of 1110101?
4. Draw the logic circuit diagram of the Boolean expression A(B+C)
5. Write on Universal gate.
6. Draw the block diagram symbol of the NOR gate?
7. (86)10 = (----------)2
8. What you mean by half adders ?
9. What does the CTRL key do ?
10. Describe the benefits of using mouse?
11. List the basic type of monitors.
12. What is a dot pitch?

PART B

(Attend any 6 questions, each question carry 5 marks)

13. What is Internet and describe the major features of internet.
14. Explain briefly : Plotter and Light pen
15. Differentiate between RAM and ROM
16. What is a logic gate? Explain the NAND and NOR gates with truth table and block diagram.
17. Explain : Encoders and Decodes
18. Explain: parity generator and checker.
19. What is BCD numbers? Write note on BCD addition
20. Explain De Morgans theorems
21. Describe different types of PC Operating Systems

PART C

(Attend any 2 questions, each question carry 15 marks)

22. Explain: Simplification of expression using K-MAP (up to 4 variables)
23. Explain briefly the
    a. Binary, octal and hexadecimal number system.
    b. Do the following conversions
        i. $(126)_{10}$ to binary
        ii. $(10110011)_2$ to decimal
        iii. $(5112)_{10}$ to hexadecimal
        iv. $(FA8)_{16}$ to binary
        v. $(562)_8$ to hexadecimal
24. Write about categories of networks.
25. Write about Input devices & output devices.

MES COLLEGE ERUMELY

MODEL EXAMINATIONS

VI SEMESTER BCA DEGREE (CBCSS) EXAMINATION APRIL 2021

CA6CRT18 Mobile Application Development - Android (Core)

Time : 3 Hours **Max Marks: 80**

PART A

(Answer any 10 questions, each question carries 2 marks)

1. What are the components of AVD?
2. What is DVM?
3. Explain Open GLIES and SqLite
4. List any four child classes of TextView
5. Describe the lifetime of an activity.
6. Write any four properties of List view.
7. What is an intent filter?
8. What is the function of content value instance?
9. How do SQLite provide database features with a compressed library?
10. Why is JSON more lightweight than XML?
11. Write the importance of Transaction in SQLite database.
12. How the tracking of user location is done in Android?

PART B

(Answer any 6 questions, each question carries 5 marks)

13. Distinguish between JSON Array and JSON Object.
14. Explain different packages imported for Wi-Fi activity.
15. Explain Android multimedia framework architecture.
16. Demonstrate the use of ListView and Spinner control.
17. Explain any five attributes of Checkbox.
18. Explain Relative Layout with Example.
19. Explain Lifecycle of Android Service.
20. Write about JDK & Android SDK
21. What are the layout views used within an Android user interface design?

PART C

(Attend any 2 questions, each question carries 15 marks)

22. Explain: Activity life Cycle
23. Why Android is used in mobile application development?
24. Explain the following with syntax and suitable example
    a. Custom toast alert
    b. Time and date picker
    c. Image view and scroll view

25. Explain : Android Architecture

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