**For First Terminal Examination -2081**

Class-10

**Subject: Optional Mathematics Course Contents:**

1.Algebra: Function

2.Matrix: All

3.Coordinate Geometry: conditions for lines to be parallel and perpendicular

4.Trigonometry: Multiple angles Sub- multiple angles

5.Limit and continuity :all

6. Statistics :all

**For Second Terminal Examination -2081**

1.Algebra: Polynomials, Function

2.Coordinate Geometry: angle between two lines, pair of straight lines,

3.Trigonometry: transformation of trigonometric ratio, Conditional trigonometric identities

4.Vectors: all

5. Limit and continuity: all

6. Statistics: all

7. Matrix:all

**For Third Terminal Examination-2081 Course Contents**

* Algebra: sequence and series.
* Coordinate: conic section, circle
* linear programming problems.
* Quadratic equation and graphs.
* Limit and continuity.
* Trigonometry: \* Solution of trigonometric equation
* Height and distance
* Transformation: All
* Revision all chapter

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**Specification Grid for First Terminal Examination-2081**

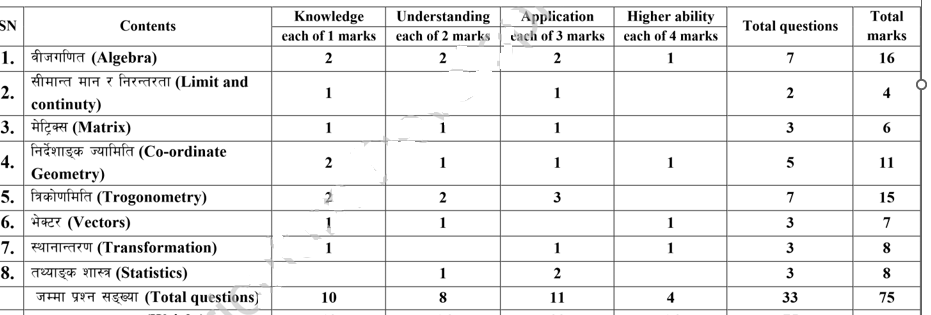
|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| S. N | Contents | Topic | K | U | A | H. A | Total number of Questions | Total mark |
| 1 | Algebra | \* Function | 2 | 2 | 2 | 1 | 7 | 16 |
| 2 | Matrix | all | 1 | 1 | 1 |  | 3 | 6 |
| 3. | \*Coordinate Geometry | conditions for lines to be parallel and perpendicular | 1 |  |  |  |  | 1 |
| 4 | Trigonometry | * Multiple angle * Sub – multiple angle | 2 | 2 | 3 | - | 7 | 15 |
| 5. | Statistics | All |  | 1 | 2 |  | 3 | 8 |
| 6. | Limit & continuity | All | 1 |  | 1 |  | 2 | 4 |
|  |  | Total mark | 7 | 6 | 9 | 1 | 22 | 50 |

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**Specification Grid for Second Terminal Examination-2081**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| S. N | Contents | Topic | K | U | A | H. A | Total number of Questions | Total mark |
| 1 | Algebra | * Function * Polynomials | 1 | 1 | 1 | 1 | 4 | 10 |
| 2 | Matrix | all | 1 | 1 | 1 |  | 3 | 6 |
| 3. | Coordinate Geometry | all | 1 | 1 | 1 | 1 | 4 | 10 |
| 4 | Trigonometry | * Multiple angle * Sub – multiple angle * Transformation of Trigonometric ratio * Conditional trigonometric identities | 2 | 2 | 1 |  | 6 | 9 |
| 5. | Vectors | * Scalar product * Vector Geometry | 1 | 1 |  |  | 2 | 3 |
| 6 | statistics | all |  | 1 | 2 |  | 3 | 8 |
| 7. | Limit & continuity | all | 1 |  | 1 |  | 2 | 4 |
| Total | | | 7 | 7 | 7 | 2 | 24 | 50 |
| Marks | | | 7 | 14 | 21 | 8 |  | 50 |

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 **Specification Grid for Third Terminal Examination-2081**

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Model Questions for First Terminal Examination -2081

**Sub: Opt : Math Time FM:50**

Class:10 **Group A 7x1=6**

1a. Define trigonometric function.

b) What is the maximum value of y=sinx.

2a) Write in sentence f(x).

b) Write the condition of two lines parallel.

3. a) Define singular matrix.

b) Express cos2A in term cosA.

4a) Write the formula to find sin3A.

Group B 6x2=12

5a.In the f= {(1, 2) ,(2, 3) , (3, 4) } and g= (2, a), (4, c) , (3, b) , then show the composite function gof in arrow diagram and find it in ordered pair form.

b) If F(x)=8x+7 then find the value of fof(x) and fof(-2)

6a)If matrix A= Find the value of A-1.

b) prove that: .

7a) IF sinA= (m+) then prove that: cos2A= - (m2+).

b) In a group data the quartile deviation and its Coefficient are 15 and respectively find first quartile.

Group C 9x3=27

8.IF f(x)=4x+5 , fog(x)=8x+17, find the value of g-1(7)

9. If f(x)=2x-5 and g(x)=3x+1 are two function then find f-1-(x) and g-1(x).

10.A real value function f:R is Defined by f(x) = 2x + 3

i) find the value of f(x) at x= 4.9, 4.99, 4.999.

ii) find the value of f(5)

iii) Is this function continuous at x = 5.

11. Solve by cramers method: 8x+11=3y and 6y-15=-2x+11

12. prove that: Tan(45+A)=sec2A+tan2A

13. prove that :

14. prove that: 4cos320+4sin310

15. . Calculate the mean deviation from the median of the given data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 |
| f | 2 | 3 | 5 | 4 | 6 |

16. Calculate the standard deviation from the given data.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Class interval | 0-4 | 4-8 | 8-12 | 12-16 | 16-20 |
| Frequency | 10 | 8 | 12 | 6 | 4 |

Group D 1x4=4

17. Two functions are f(x)= and g(x)=3x-4. If (fog)-1(x) is an identity function, find the value of x.

THE END

EMBOCS NAWALPARASI

Model Questions for Secondary Terminal Examination -2081

**Sub: Opt : Math Time FM:50**

Class:10 **Group A 7x1=6**

1a)Define identity function.

b) Write a condition to be a continuous for a function.

2a) If matrix A=( find A-1.

3a) If be the angle between the two straight lines whose equations are as

y=*m*1 *x* + *c*1 and *y* = *m*2 *x* + *c*2 , then find the value of tan.

b) The slopes of two straight lines L1 and L2 are M1 and M2 respectively. write the condition of parallelism of lines.

4a) Express sinA in term of tan .

b) Write cosx+cosy into product form.

Group B 7x2=14

5a) If f(x)=, Find the value of f-1(

b) Find the obtuse angle between the lines 2x-y+3=0 and x-3y+4=0.

6a)Find the value of D1 and D2 from the given equation y=2x, x+2y=10 by cramers rule.

b) prove that: = tan.

7a) Find the value of sin75

b )The position vectors of A and B are and - respectively. If the point P is the midpoint of line AB, find the position vectors of point P.

8a) In a data , the first quartile and quartile deviation are 17.5 and 20 respectively. Find the third quartile and coefficient of quartile deviation.

Group C 7x3=21

9. If f(x)=2x-4, then prove that (fof-1)x is an identitity function.

10, If f(x)=

1. For x=2.9999, find the value of f(x)
2. For x=3.0001 find the value of f(x)
3. Is the function f(x) continuous at x=3.give reason

11. Prove that: 2cos4A+1= (2cosA-1) (2cosA+1) (2cos2A-1)

12. Solve the equation by matrix method. 2x-3y=7and 4y-3x= -1

13. Find the equation of a pair of line through (2,5) and perpendicular to the line 5x+2y=7

14. . Calculate the mean deviation from the mean of the given data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x | 0-15 | 15-30 | 30-45 | 45-60 | 60-75 |
| f | 2 | 7 | 10 | 6 | 5 |

15. Calculate the standard deviation from the given data.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Class interval | 0-4 | 4-8 | 8-12 | 12-16 | 16-20 |
| Frequency | 12 | 10 | 8 | 5 | 15 |

Group D 4x2=8

16.Find the equation of straight line passing through the point (3,2) and making angle 0f 45

17. Solve: y3-19y-30=0

\*\*\*THE END\*\*\*\*

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Model Questions for Third Terminal Examination -2081

**Sub: Opt : Math Time FM:75**

Class:10 **Group A 10x1=10**

