**GUESS PAPER-2013**

**CLASS XII**

**Subject: Maths**

SECTION-A

Q1 Find the principal value 3sin-1 -1

Q2 Find

Q3 If A is a square matrix such that A2=A, then find 2 - 3A.

Q4 If A=

Q5 Evaluate:

Q6 Find the value of

Q7 Write the value

Q8 If is the angle between any two vectors

Q9

Q10 Find a vector of magnitude 4 units which is parallel to the vector

SECTION-B

Q11 By using properties of determinants, show that

Q12 Evaluate:

Q13 If xy = ex-y, show that

Q14 Show that the curves 2x = y2 and 2xy = k cut each at right angles if k2 =8.

Q15 Find the general solution of the differential equation:

Q16 Solve :

Q17 If find the angle between .

Q18 By examining the chest X-ray, the probability that T.B. is detected when a person is actually suffering is 0.99. The probability of incorrect diagnoses is 0.001. In a certain city 1 in 1000 persons suffer from T.B. A person selected at random and is diagnosed to have T.B. what is the chance that he actually has T.B?

Q19 Find the equation of the perpendicular drawn from the point (2,4,-1) to the line . Also find the coordinates of foot of the perpendicular.

Q20 Show that the relation in the set A= {1,2,3,4,5} given by

R={(a,b): |a-b|is even}, is an equivalence relation.

Q21 Find the equation of the tangent and the normal to the curve x =1 –cos ,

y =

Q22 Simplify: tan-1

SECTION-C

Q23. If A= find A-1 and use it to solve: x+y+2z=0, X+2y-z=9 and x-3y+3z=-14

Q24 A and B take turns in throwing to dice, the first two throw 9 being declared a winner. Show that the chances of A and B winning are in the ratio of 9:8, if A starts the game.

Q25 Prove that if a plane has the intercepts a,b,c and is at a distance of p units from the origin, then .

Q26 A right circular cylinder is inscribed in a right circular cone. Show that the curved surface area of the cylinder is maximum when the diameter of cylinder is equal to the radius of the base of the cone.

Q27 Find the area of smaller region bounded by the ellipse & the line

Q28 Evaluate:

Q29 An oil company requires 13,000, 20,000 and 15,000 barrels of high grade, medium grade and low grade oil respectively. Refinery A produces 100, 300 and 200 barrels per day of high, medium and low grade oil respectively whereas the refinery B produces 200,400 and 100 barrels per day respectively. If A costs Rs. 400 per day an B costs Rs.300 per day to operate how many days should each be run to minimise the cost of requirement.

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