1. The statement ***p🡪(q🡪p)*** is equivalent to
   1. ***p 🡪(p🡪q)***
   2. ***p 🡪(p V q)***
   3. ***P🡪(p ^ q)***
   4. ***P🡪(p <--> q)***

Ans: (b)

1. Statement 1 : **~ ( p 🡨🡪 ~ q)** is equivalent to **p🡨🡪 q.**

Statement 2 : **~ ( p 🡨🡪 ~ q)** is a tantology.

* 1. Statement – 1 is true, Statement – 2 is true;

Statement – 2 is not a correct explanation for Statement – 1.

* 1. Statement – 1 is true, Statement – 2 is false;
  2. Statement – 1 is false, Statement – 2 is true;
  3. Statement – 1 is true, Statement – 2 is true;

Statement – 2 is a correct explanation for Statement – 1.

Ans : (b)

1. The distance between two points P and Q is *d* and the length of projections of PQ on the coordinate planes are *d1, d2, d3*. Then *d12, d22, d32 = kd2*, where *k* is
2. 1
3. 5
4. 3
5. 2

Ans : d)

1. Let P be any point on the plane lx + my + nz  =  P and Q be a point on the line OP such that OP.OQ = P2. The locus of the point Q is

(a)  lx + my + nz – p= x2 +  y2 + z2

(b)  lx + my + nz = P(x2  +  y2  + z2)

(c)  P( lx + my + nz) = x2  +  y2  + z2

(d)  x2 +  y2 + z2= p2

Ans: (c)

1. The points (8,-5, 6), (11, 1, 8), (9, 4, 2) and (6,-2, 0) are the vertices of a

(a) rhombus                            (b) square

(c) rectangle                            (d) parallelogram

Ans: (b)

# A pair of dice is thrown independently three times. The probability of getting a score of exactly 9 twice is

Top of Form

1. 1/729
2. 8/729
3. 8/9
4. 8/243

Ans : d

1. A random variable X has Poisson distribution with mean 2. Then P(X>1.5) equals
   1. 2/e2
   2. 0
   3. 1- (3/e2)
   4. 3/e2

Ans: (c)

1. The mean and variance of a random variable X having binomial distribution are 4 and 2 respectively, then P(X=1) is
   1. 1/4
   2. 1/32
   3. 1/16
   4. 1/8

Ans : (b)

1. The maximum value of (cos x1).(cos x2)....(cos xn) under the restrictions 0≤ x1, x2,...xn≤ π/2 and (cot x1).(cot x2)....(cot xn) =1 is
   1. 1/2n/2
   2. 1/2n
   3. 1/(2n)
   4. 1

Ans: (a)

1. The number of integral values of k for which the equation 7(cos x) + 5(sin x) = 2k + 1, has a solution is
   1. 4
   2. 8
   3. 10
   4. 12

Ans: (b)

1. The period of sin2x is
   1. π 2
   2. π
   3. 2 π
   4. π /2

Ans: (b)

1. Let ***a = 2i + j - 2k*** and ***b = i + j***. If c is a vector such that ***a.c = |c|, |c-a|=2√2*** and the angle between ***(a\*b)*** and ***c*** is ***300***, then ***|(a\*b)\*c|***=
   1. 2/3
   2. 3/2
   3. 2
   4. 3

Ans: (b)

1. A plane which is perpendicular to two planes ***2x-2y+z=0*** and ***x-y+2z=4***, passes through ***(1,-2,1)***. The distance of the plane from the point ***(1,2,2)*** is
   1. 0
   2. 1
   3. √2
   4. 2√2

Ans: (d)

1. The probabilities that a student will obtain grades A, B, C OR D are 0.30, 0.35, 0.20 and 0.15 respectively. The probability that he will receive atleast C grade, is
   1. 0.65
   2. 0.85
   3. 0.80
   4. 0.20

Ans: (b)

1. A bag contains four tickets numbered 00, 01, 10, 11. Four tickets are chosen at random with replacement, the probability that sum of the numbers on the tickets is 23, is
   1. 3/32
   2. 1/64
   3. 5/256
   4. 7/256

Ans: (a)

1. In the expansion of (1 + x) n the sum of coefficients of odd powers of x is
   1. 2^n+1
   2. 2^n-­1
   3. 2^n
   4. 2^(n­1)

Ans: (d)

1. In the expansion of (1 + *x*)*n* the sum of coefficients of odd powers of *x* is
2. 2^n+1
3. 2^n-1
4. 2^n
5. 2^(n-1)

Ans d

1. If the coefficients of 5*th*, 6*th* and 7*th* terms in the expansion of (1 + *x*)*n* be in A.P., then *n* =
2. 7 only
3. 14 only
4. 7 and 14
5. None

Ans c

1. If *n* is a positive integer, then (√3 + 1)2*n* – (√3 – 1)2*n* is
2. An irrational number
3. An odd positive integer
4. An even positive integer
5. A rational number other than positive integers

Ans C

1. If sum of *n* terms of an A.P. is 3*n*2 + 5*n* and *Tm* = 164 then *m* =

* 1. 26
  2. 27
  3. 28
  4. None

Ans b

1. The number 111..........1 (91 times) is a
   1. EVEN
   2. PRIME
   3. NOT PRIME
   4. NONE

Ans c

1. 
2. Continous and differentiable
3. Continuous and not differentiable
4. Discontinuous and differentiable
5. Discontinuous and not differentiable

Ans b



* 1. 
  2. 
  3. 
  4. 

Ans d

1. 
   1. 0
   2. 1
   3. 2
   4. 3

Ans c

1. **If A = { (1, 2, 3}, then the relation R = {(2, 3)} in A is**
2. symmetric and transitive only
3. symmetric only
4. transitive only
5. not transitive

Ans d

1. If http://regentsprep.org/Regents/math/algtrig/ATS5/TheoPr7.gifrepresents the number of combinations of *n* items taken *r* at a time,  
   what is the value of http://regentsprep.org/Regents/math/algtrig/ATS5/TheoPr8.gif when n=4?
   1. 24
   2. 4
   3. 6
   4. 4

Ans b

1. From a group of 10 professors and 6 assistant professors, a management institute desires to send to delegation of 8 persons consisting of 5 professors and 3 assistant professors to the IIMs annual meet . If Prof. Balamurali , a science prof. refuses to be in the delegation if assistant Prof. Sheshdari , an art prof. is included in the delegation, then in how many ways can the delegation be formed?

a) 9 C44C3

b) 9 C54C2

c) 10 C56C3 + 9C45C2

d) 9C44C3 + 9C54C2

ANS c

1. Given ai2 +b i2 + ci2 = 1, (i = 1, 2, 3) and aiaj + bibj + cicj = 0

(i≠j, i, j = 1, 2, 3), then the value of  is

1. 0
2. 1/2
3. 1
4. 2

Ans a

1. **The center of the arc** Complex Number MCQs  is
   1. (4,1)
   2. (1,4)
   3. (2,5)
   4. (3,1)

Ans a

1. **The equation** Quadratic  Equations and Expressions  has
2. no solution
3. only one solution
4. only two solutions
5. more than two solutions

Ans d