2007 MBA - MATHS MODEL QUESTION PAPER

TIME : 3 HOUR

Question 1 of 25
If A + B = 90°, sin A = p/q, cos B = r/s, the correct relation between p, q, r, s will be:

1. ps = qr

2. p2 + s2 = q2 + r2

3. pq = rs

4. pr = qs

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Question 2 of 25
A vertical flagstaff stands on a horizontal plane. From a point at a distance of 150 feet from its foot, the angle of elevation of its top is found to be 30°. Find the height of the flagstaff.

1. 75 feet

2. 86.6 feet

3. 100 feet

4. None of these

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Question 3 of 25
Two pillars of equal height stand on either side of a roadway, which is 150m wide. At a point on the roadway between the pillars, the elevation of the tops of the pillars is 60° and 30°. Find the height of both the pillars.

1. 64.95 m

2. 37.5 m

3. 75 m

4. 100 m

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Question 4 of 25
Find the value of Y in Y =; given tan = 2.

1. 6/7

2. 7/3

3. 15/14

4. 1

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Question 5 of 25
Given that cos2a = and sin2a = Find the value of
if tan (a/2) is – 3.

1. 65/51

2. 4/65

3. 38/4

4. 4/38

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Question 6 of 25
Find the value of:

1.

2.

3.

4. 1

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Question 7 of 25
In the figure, find X in terms of Y & Z

1. X = Y + Z tanq

2. X = Y + Z cotq

3. X = Y + Z cosq

4. X = Y + Z sinq

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Question 8 of 25
If sin q = 3/5, find the value of (cos q + tan q + cot q)?

1.

2.

3. 2

4.

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Question 9 of 25
If X = Cosec q + Cot q and Y = Cosec q – Cot q, then:

1. X2 – Y2 = 1

2. X2 + Y2 = 1

3. X Y = 1

4. X Y = – 1

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Question 10 of 25
A vertical pole is 300 metres high. Find the angle subtended by the pole at a point 300Ö3 metres from its base.

1. 45°

2. 30°

3. 60°

4. 37°

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Question 11 of 25
The angles of elevation of the top of a tower from two points a and b from the base and in the same straight line with it are complementary. Find the height of the tower.

1. ab

2. (ab)2

3. a + b

4.

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Question 12 of 25
Find the value of cos (–7p/2):

1. 0

2. – 1

3. $1/Ö2

4. ± Ö3/2

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Question 13 of 25
Find the minimum value of 4sinq for 0° £ q £ 360°:

1. 1

2. 0

3. - 1

4. ¼

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Question 14 of 25
Given Cos q =, what is the value of?

1. 2

2. 3

3.

4.

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Question 15 of 25
Find the value of sin 43o cos 47o + cos 43o sin 47o.

1. 1

2. 2

3. -1

4. None of these

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Question 16 of 25
If sin A + cos A =, the value of sin A cos A will be:

1.

2.

3.

4. None of these

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Question 17 of 25
The value of will be:

1. (Ö5 - 1)/4

2. (Ö5 + 1)/4

3. (3 – 2Ö5)

4. 1

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Question 18 of 25
If tan A =, the value will be:

1. 16/9

2. 9/16

3. 3/4

4. 1

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Question 19 of 25
An aeroplane is flying, having angle of elevation of 45o from a point P on the ground. After ten seconds, the angle of elevation changes to 30o. If the plane is flying at the height of 3000 metre, then at what speed is it flying, in m/sec?

1.

2. 300

3. 200

4. 1000

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Question 20 of 25
An acrobat climbs a rope stretched from a point 120 metres above the ground to a point on the ground. The angle made by the rope with the ground is 60o. Calculate the length of the rope.

1. 140 m

2. 80m

3. 175 m

4. 120m

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Question 21 of 25
cos 1° + cos 2° + cos 3° + …. + cos 179° is equal to:

1. Positive real number

2. Negative real number

3. 0

4. None of these

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Question 22 of 25
If 0 £ A £ 2p, the value of A satisfying the equation sin2 A + 2 sin A cos A – 3 cos2 A = 0 will be:

1. p/4

2. p/4

3. 2p/5

4. p/6

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Question 23 of 25
A ladder AB rests against a wall such that OB = OA = 5 metres.
If the end B falls down to D such that BD = 1 metre

and if end A moves to C then AC is equal to

1. 1 metre

2. 5

3. $< 1 metre

4. (– 5)

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Question 24 of 25
ABC is a triangle in which ĐA = 60o, AB = 3 cm and AC = 4 cm. If BD is the perpendicular from B to the side AC, what is the length of BD?

1. 2

2.

3. 2 cm

4. 1.5cm

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Question 25 of 25
The two sides of the triangle are + 2 and – 2 and the included angle is 30o, then the third side of the triangle is

1.

2.

3.

4. Cannot determine