**Instructions to Students: Read all the questions thoroughly and write down the answers.**

**This question paper contains a total of 4 parts. They are**

1. **There will be 4 questions. Each question carries 4 marks. Answer all the questions.**
2. **There will be 6 questions. Each question carries 2 marks. Answer all the questions.**
3. **There will be 7 questions. Each question carries 1 mark. Answer all the questions.**
4. **There will be 10 multiple choice questions each question carries ½ mark. Answer all the questions.**
5. **Answer all the questions. Each question carries 4 marks 4 x 4 =16**
6. If Cosecθ + Cotθ = k, find Cosθ = k ²-1/k ² + 1
7. The height of the top of the building from the foot of the tower is 30 º and the angle of elevation of the top of the tower from the foot of the building is 60 º. If the tower is 30 meters high, find the height of the building?
8. A dice was rolled twice respectively, i) Find the probability of 5 not appearing on the Dice (ii) appearing on the dice.?
9. In an observation covering 400 neon bulbs, the life span of is given in the following table.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Life time (in Hours)  | 1500-2000 | 2000-2500 | 2500-3000 | 3000-3500 | 3500-400 | 4000-4500 | 4500-5000 |
| No of bulbs | 14 | 56 | 60 | 86 | 74 | 62 | 48 |

1. **Answer all the questions. Each question carries 2 marks 6 x 2 =12**
2. The salaries and the number of employees in a company are given in the following table. Make an ascending cumulative frequency table for this data.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Salaries (in Thousands) | 5 - 10 | 10 - 15 | 15 - 20 | 20 - 25 | 25 - 30 | 30 - 35 | 35 - 40 |
| No of employees  | 4 | 45 | 20 | 13 | 9 | 7 | 2 |

1. Tan2A = Cot (A-18 O), If 2A is a acute angle, find the value of A?What is the probability of 53 Sundays in a leap year? Also what is the probability of 54 Sundays?

7 cm

P

1. Find the volume and the total surface area of a hemisphere of radius 3.5 cm?
2. In the figure ABCD is a square of 7 cm. What are the areas of APD And BPC?
3. Define SinA in a triangle ABC, Where <B = 90 o
4. **Answer all the questions. Each question carries 1 mark 7 x 1 = 7**
5. Write the Axiom of Angle Side and Angle(SAS)?
6. The diagonals of a Rhombus are 24 cm and 32 cm. Then what is the perimeter of the Rhombus?
7. Radius of Circle is 7cm. What is the area of a sector whose angle 600?
8. In a Right circular cone, Radius 6 cm and height 7 cm. Find the volume of circular cone
9. If A + B =900 Show that SinA = Sin?
10. Find the value of 2tan2450 + cos2300 - sin2600
11. What is the method of finding the median of an ungrouped data?
12. **Answer all the questions. Each question carries 1/2 mark 10 x 1/2 = 5**
13. The area of two similar triangles is 169 cm2, 121 cm2, one of its larger side is 26 cm and what is the the second triangle is the corresponding side. ( )

 A) 12 cm B) 14 cm C) 19 cm D) 22 cm

1. The number of tangent lines that can be drawn to a circle is ( )

 A) 1 B) 2 C) 3 D) infinity

1. A cone and Sphere have the same radius, find the ratios of their volumes

A) 1:1 B) 1:3 C) 3:1 D) 1:2

1. Value of Sin 00 \_\_\_\_\_\_\_\_\_\_\_\_\_ ( )

A) 1 B) 0 C) 1/2 D) 2

1. Tan A= ( )

A) SinA/CosA B) SinA.SecA C) CosecA/SecA D) All correct

1. Consequences when two coins are tossed up simultaneously ( )

A) H,T B) HH, TT C) T, T D) HH, TT, HT, TH

1. The average of first 10 natural numbers is ( )

A) 5 B) 6 C) 5,5 D) 6.5

1. 1,1,1,2,2,3,3,3,3,4,5,6. Find the mode ( )

A) 2 B) 3 C) 5 D) 4

1. P(E) + P($\overbar{E}$) = ( )

A) 0 B) 1 C) 2 D)-1

1. Which of the following is not a central measurement? ( )
2. Average B) Mode C) Median D) Range