THE HIGH COURT OF ORISSA

MAIN WRITTEN EXAMINATION FOR THE RECRUITMENT OF ASO's 2024

MATHEMATICS

Duration: Two Hours **Full Marks: 100**

Part - A

All questions are compulsory and carry equal marks. **10x2 = 20 Marks**

(1) Find the sum of all two digit numbers that give a remainder of 3 when they are divided by 7.

(2) Find the last number that when divided by 16, 18 and 20 leaves a remainder of 4 in each case but is completely divisible by 7.

(3) What is the location value of 7 in the figure 9872590?

(4) The square root of 289 is _____.

(5) Find the factors of 330.

(6) The side of an equilateral triangle is 4a. Find its altitude.

(7) If we increase the radius of a circle by 50%, then by what percentage area of the circle will be increased?

(8) The number of members of a club is increased by 10% every year. If the initial number of the members is 500, then what will be the number of members at the beginning of the third year?

(9) How many times will the wheel of a car rotate in covering a distance of 1925 metres, if the radius of the wheel is 49 cm?

(10) Ten men can complete a piece of work in 18 days. After six days, 5 more men join. In how many days will the remaining work be completed?

Part - B

All questions are compulsory and carry equal marks. **10x6 = 60 Marks**

(11) The population of a town is 155625. For every 1000 male, there are 1075 females. If 40% of males and 245 of females are literate. Find the literary percentage in the town.

(12) Four years ago, the ages of Reetu and Reena were in the ratio 5:6 respectively. Eight years from now the respective ratio of their ages will be 8:9. What is the sum of their ages at present?

(13) The average monthly income of a person in a certain family of 5 members is Rs. 1000. What will be the monthly average income of one person in the same family if the income of one person is increased by Rs. 12,000 per year?

(14) In a race of 200 metres run, A beats S by 20 metres and N by 40 metres. If S and N are running a race of 100 metres with exactly same speed as before, then by how many metres will S beat N?

(15) Reema, Ruchi and Richa can make a painting in 15, 20 and 30 days respectively. They undertake to make a painting for Rs. 810/-. The share of Reema exceeds that of Ruchi by ____?

(16) If Rs. 80/- amounts to Rs. 140/- in 4 (four) years, what will Rs. 96/- amount to in 10 (ten) years at the same interest per annum?

(17) A shirt was sold at a profit of 15%. If its cost had been 5% less and it had been sold for Rs.21/- less, then the profit would have been 10%. Find the cost of the shirt.

(18) A starts business with Rs.5000/- and B joins the business 5 months later with an investment of Rs.6000/-. After a year, they earn a profit of Rs. 34,000/-. Find the shares of A and B in the profit amount depending on their individual investment.

(19) There is a leak in the bottom of a tank. This leak can empty a full tank in 8 hours. When the tank is full, a tap is opened into the tank which admits 6 litres per hour and the tank is now emptied in 12 hours. What is the capacity of the tank?

(20) An isosceles right-angled triangle has an area 800 sq.cm. What is the length of its hypotenuse?

Part - C
Both questions are compulsory and carry equal marks. **2x10 = 20 Marks**

(21) A ladder of length 25 ft is rested against a wall. The foot of the ladder is 7 ft away from the foot of the wall. If the top of the ladder slips 4 ft down on the wall, by how much distance foot of the ladder slides away from the wall.

(22) A car covers a distance of 400 Kilometres at a certain speed. Had the speed been 12 Kms per hour more, the time taken for the journey would have been 1 hour 40 minutes less. Find the original speed of the car.

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