



UNIVERSITY OF UYO

2012/2013 POST UTME SCREENING EXERCISE

MATHEMATICS

1. Solve for x given that $\log x = -\frac{1}{4}$ A. $-\frac{1}{2}$ B. -4 C. $\frac{1}{2}$ D. 4
2. Find dy/dx given that $x = t^2 + 1$, $y = t^3$ A. $2t/3$ B. $3t/2$ C. $t + 1/t^2$ D. y/x
3. Find without using tables, the value of $\sin 210^\circ$ A. $\sqrt{3}/2$ B. $-\sqrt{3}/2$ C. $\frac{1}{2}$ D. $-\frac{1}{2}$
4. A shop sells bananas at 6 for N100. A trader sells the same kind of bananas at 8 for N120. Which price is cheaper, and by how much per banana? A. 8 for N120; N1.67 B. 8 for N120; N15 C. 6 for N100; N16.67 D. 6 for N100; N6
5. The sum to infinity of G.P is 99. Find its first term if the common ratio is $2/3$ A. 66 B. 33 C. 50 D. 9
6. Calculate the perimeter of a sector of circle of radius 27 cm, the angle of the sector being 140° A. 66 cm B. 93 cm C. 120 cm D. 76 cm
7. How many revolutions does a bicycle wheel of diameter 70 cm make in travelling 110 cm A. 50 B. 25 C. 5 D. 40
8. Express 495 g as a percentage of 16.5 kg A. 33% B. 3% C. 30% D. 33.3%
9. Which of the following quadrilaterals has diagonals intersecting at right angles?
A. rectangle B. rhombus C. trapezium D. parallelogram
10. In a test, the mean of four student was 61. The median was 60 and the mode was 57. What is the highest score? A. 63 B. 64 C. 67 D. 65
11. Evaluate $\log_2 8 - \log_2 1/9$ A. $-3/2$ B. 5 C. $3/2$ D. 1

12. Which of the following statements is not true? A. If $R \cup V = R$, then $Q \subset R$ B. if $R \cap Q = R \cup Q$, then $R = Q$ C. if $Q \subset R$ then Q and R are disjoint sets D. if $R \cap Q = R$, then $R \subset Q$
13. In a school inter-house sport competition, 80% of the students turned up at the athletic event and 60% attended the football match. What percentage of the students attended both events? A. 40% B. 50% C. 70% D. none of the above
14. A box contains two red balls and four blue balls. A ball is picked at random from the box and then replaced before a second ball is drawn. Find the probability of drawing two red balls A. $\frac{4}{16}$ B. $\frac{1}{4}$ C. $\frac{2}{5}$ D. $\frac{1}{5}$
15. If $5^x + \frac{3}{25} 2x - 3 = 1$ find x . A. 2 B. 3 C. 4 D. 5
16. Subtract 16418_9 from 18630_9 A. 1121_9 B. 2112_9 C. 2113_9 D. 2211_9
17. Simplify $7\frac{1}{12} - 4\frac{3}{4} + 2\frac{1}{2}$ A. 4 B. $4\frac{1}{6}$ C. $4\frac{5}{6}$ D. $5\frac{5}{6}$
18. A student spent $\frac{1}{5}$ of his allowances on books, $\frac{1}{3}$ of the remainder on food and kept the rest on contingencies. What fraction was kept? A. $\frac{7}{15}$ B. $\frac{8}{15}$ C. $\frac{2}{3}$ D. $\frac{4}{5}$
19. If $\log_{10} 2 = 0.3010$ and $\log_{10} 7 = 0.8451$, evaluate $\log_{10} 280$ A. 3.4471 B. 2.4471 C. 1.4471 D. 1.4071
20. If $p = \frac{rs^3}{T}$, express r in terms of p , s and t . A. $\frac{p^2t}{s^4}$ B. $\frac{p^3t}{s^3}$ C. $\frac{p^2t}{s^3}$ D. $\frac{pt}{s^3}$
21. A regular polygon has 150° as the size of each interior angle. How many sides does it have? A. 12 B. 10 C. 9 D. 8
22. If the hypotenuse of a right angled isosceles triangle is 2 cm. What is the area of the triangle? A. $\frac{1}{2}$ cm² B. 1 cm² C. $\sqrt{2}$ cm² D. $2\sqrt{2}$ cm
23. Find the radius of a sphere whose surface area 154 cm² A. 7.00 cm B. 3.50 cm C. 3.00 cm D. 1.75 cm [$\pi = 3.142$]
24. If the 7th term of an A.P is twice the third term and sum of the first four terms is 42. Find the common difference A. 6 B. 3 C. 2 D. 1
25. What value of x makes the function $x(4-x)$ maximum? A. 4 B. 3 C. 2 D. 1



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PAST QUESTIONS

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Awajis Ibotyle
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