M represents the median and D the mode of the measurements 5, 9, 3, 5, 8 then (M,D) is A. (6,5) B. (5,8) C. (5,7) D. (5,5) E. (7,5)

2. A construction company is owned by two partners X and Y and it is agreed that their profit will be divided in the ratio 4:5. at the end of the year. Y received #5,000 more than x. what is the total profit of the company for the year? A. #20,000.00 B. P’0#25,000.00 C. #30,000.00 D. #15,000.003 E.#45,000.00

3. Given a regular hexagon, calculate each interior angle of the hexagon. A. 600 B. 300 **C. 1200** D. 450 E. 1350

4. Solve the following equations 4x – 3 = 3x + y = 2y + 5x – 12 A. 4x = 5, y = 2 B. x = 2, y = 5 C. x = -2, y = -5 D. x = 5, y = -2 E. x = -5, y = -2

5. If x = 1 is root of the equation x3 – 2x2 – 5x + 6, find the other roots A. -3 and 2 B. –2 and 2 C. 3 and –2 D. 1 and 3 E. –3 and 1

6. If x is jointly proportional to the cube of y and the fourth power of z. In what ratio is x increased or decreased when y is halved and z is doubled? A. 4:1 increase B. 2:1 increase C. 1:4 decrease D. 1: 1 no change E. 3: 4 decrease

8. Given that cos z = L, where z is an acute angle find an expression for Co +Z - cosecz sec Z + tan z A. l - L B. L2-√1−L2 C. -L-√1−L 1+L L2+L-1 (C1+L) +√1−L2

D. √L−1. E. L-(L2-1) (L1+L2) +√1−L2 1+ √1 - L2+ √1 - L2

10. If x + 2 and x – 1 are factors of the expressions lx + 2kx2 + 24, find the values of l and k A. l = -6, k = -9 B. l = -2, k = 1 C. l = -2, k = -1 D. l = 0, k = 1 E. l = 6, k = 0

In a class of 60 pupils, the statistical distribution of the number of pupils offering Biology, History, French, Geography and Additional Mathematics is as shown in the pie chart above. How many pupils offer Additional Mathematics? A. 15 B. 10 C. 18 D. 12 E. 28

14. y varies partly as the square of x and y partly as the inverse of the square root of x. write down the expression for y if y = 2 when x = 1 and y = 6 when x = 4 A. y = 10x2 + 52 B. y = x2 + 1 16. The lengths of the sides of a right-angled triangle are (3x + 1)cm, (3x - 1)cm and x cm. Find x A. 2 B. 6 C. 18 D. 12 E. 0

17. The scores of a set of a final year students in the first semester examination in a paper are 41,29,55,21,47,70,70,40,43,56,73,23,50,50. find the median of the scores. A. 47B. 481/2 C. 50 D. 48E. 49

21. Find x if (x base 4)2 = 100 1000base 2 A. 6 B. 12 C. 100 D. 210 E. 110

22. Simplify log10a1/2 + 1/4log10a – 1/12log10a7 A. 1 B. 7/6log10a C. 0 D. 10 E. a

23. If w varies inversely as V and u varies directly as w3, find the relationship between u and V given that u = 1, when V = 2 A. u = 8V3 B. u = 2 V C. V = 8/u2 D. V = 8u2 E. U = 8/v3

24. Solve the simultaneous equations for x x2 + y – 8 = 0 y + 5x – 2 = 0

A. –28, 7 B. 6, -28 C. 6, -1 D. –1, 7 E. 3, 2

28. The scores of 16 students in a Mathematics test are 65,65,55,60,60,65,60,70,75,70,65,70,60,65,65,70 What is the sum of the median and modal scores? A. 125 B. 130 C. 140 D. 150 E. 137.5

29. The letters of the word MATRICULATION are cut and put into a box. One of the letter is drawn at random from the box. Find the probability of drawing a vowel.

A. 2/13 B. 5/13 C. 6/13 D. 8/13 E. 4/13

30. Correct each of the number 59.81789 and 0.0746829 to three significant figures and multiply them, giving your answer to three significant figures. A. 4.46 B. 4.48 C. 4.47 D. 4.49 E. 4.50

31. If a rod of length 250cm is measured as 255cm longer in error, what is the percentage error in measurement? A. 55 B. 10 C. 5 D. 4 E. 2

32. If (2/3)m (3/4)n = 256/729, find thevalues of m and n A. m = 4, n = 2 B. m = -4, n = -2 C. m = -4, n = 2 D. m = 4, n = -2 E. m = -2, n = 4

33. Without using tables find the numerical value of log749 + log7(1/7) A. 1 B. 2 C. 3 D. 7 E. 0

35. One interior angle of a convex hexagon is 1700 and each of the remaining interior angles is equal to x0. find x A. 1200 B. 1100 C. 1050 D. 1020 E. 1000

37. A ship H leaves a port P and sails 30km due South. Then it sails 60km due west. What is the bearing of H from P? A. 26034’ B. 243026’ C. 116034’ D. 63026’ E. 2400

39. On a square paper of length 2.524375cm is inscribed a square diagram of length 0.524375. find the area of the paper no covered by the diagram correct to 3 significant figures. A. 6.00cm2 B. 6.10cm2 C.

50 A man drove for 4hours at a certain speed, he then doubled his speed and drove for another 3 hours. Altogether he covered 600km. At what speed did he drive for the last 3 hours? A. 120km/hr B. 60km/hr C. 600/7km/hr D. 50km/hr E. 100km/hr.

1. Simplify (2/3 – 1/5) – 1/3 of 2/5 3 – 1/1/2 A. 1/7B. 7 C. 1/3 D. 3E. 1/5

2. If 263 + 441 = 714, what number base has been used? A. 12 B. 11 C. 10 D. 9 E. 8

4. P sold his bicycle to Q at a profit of 10%. Q sold it to R for #209 at a loss of 5%. How much did the bicycle cost P? A. #200 B. #196 C. #180 D. #205 E. #150

5. If the price of oranges was raised by 1/2k per orange, the number of oranges customer can buy for #2.40 will be less by 16. What is the present price of an orange? A. 21/2k B. 31/2k C. 51/2k D. 20k E. 211/2k

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6. A man invested a total of #50,000 in two companies. If these companies pay dividend of 6% and 8% respectively, how much did he invest at 8% if the total yield is #3.700? A. #15,000B. #29,600C. #21,400 D. #27,800E. #35,000

7. Thirty boys and x girls sat for a test. The mean of the boys’ scores and that of the girls were respectively 6 and 8. find x if the total score was 468. A. 38 B. 24 C. 36 D. 22 E. 41

8. The cost of production of an article is made up as follows Labour #70 Power #15 Materials #30 Miscellaneous #5 Find the angle of the sector representing labour in a pie chart. A. 2100 B. 1050 C. 1750 D. 1500 E. 900 9.

Bola chooses at random a number between 1 and 300. What is the probability that the number is divisible by 4? A. 1/3 B. ¼ C. 1/5 D. 4/300 E. 1/300

12. A trader in a country where their currency ‘MONT’ (M) is in base five bought 103(5) oranges at M14(5) each. If he sold the oranges at M24(5) each, what will be his gain? A. M103(5) B. M1030(5) C. M102(5) D. M2002(5) E. M3032(5)

13. Rationalize

(5√5 - 7√5)(/√7 - √5 A. -2√35 B. 4√7 - 6√5 C. -√35 D. 4√7 - 8√5 E. √35 14. Simplify 3n – 3n – 1 33 x 3n – 27 x 3n – 1 A. 1 B. 0 C. 1/27 D. 3n – 3n – 1 E. 2/27

15. p varies directly as the square of q an inversely as r. if p = 36, when q = 3 and r = p, find p when q = 5 and r = 2 A. 72 B. 100 C. 90 D. 200 E. 125

16. Factorise 6x2 – 14x - 12 A. 2(x + 3) (3x - 2) B. 6(x - 2) (x + 1) C. 2(x - 3) (3x + 2) D. 6(x + 2) (x - 1) E. (3x + 4) (2x + 3)

17. A straight line y = mx meets the curve y = x2 – 12x + 40 in two distinct points. If one of them is (5,5), find the other A. (5,6) B. (8,8) C. (8,5) D. (7,7) E. (7,5)

19. In a racing competition. Musa covered a distance of 5xkm in the first hour and (x + 10)km in the next hour. He was second to Ngozi who covered a total distance of 118km in the two hours. Which of the following inequalities is correct? A. 0 < -x < 15 B. –3 < x < 3 C. 15 < x < 18 D. 0 < x < 15 E. 0 < x < 18

20. 2x + 3y = 1 and y = x – 2y = 11, find (x + y) A. 5 B. –3 C. 8 D. 2 E. –2

21. Tunde and Shola can do a piece of work in 18days. Tunde can do it alone in x days, whilst Shola takes 15 days longer to do it alone. Which of the following equations is satisfied by x? A. x2 – 5x – 18 = 0 B. x2 – 20x + 360 = 0 C. x2 - 21x – 270 = 0 D. 2x2 + 42x – 190 = 0 E. 3x2 – 31x + 150 = 0

27. A cone is formed by bending a sector of a circle having an angle of 2100. Find the radius of the base of the cone if the diameter of the circle is base of the cone if the diameter of the circle is 12cm A. 7.00cm B. 1.75cm C. Ö21cm D. 3.50cm E. 2Ö21cm

29. The sides of a triangle are (x + 4)cm, x cm and (x- 4) cm respectively. If the cosine of the largest angle is 1/5, find the value of x A. 24cm B. 20cm C. 28cm D. 88/7ccm E. 0cm

30. If a = 2x/1 – x and b = 1 + x / 1 – x then a2 – b2 in the simplest form is A.3x+1/(x-1) B. 3x2-1/(x-1)2 C. 3x2+1/(1-x)2 D. 5x2-1/(1-x)2 E. 5x2 -2x -1/(1-x)2 ( x-1) 31. Simplifty (1 + 1 ) (x+2) ( x+1)

A. (x2 - 1)(x + 2) B. x2 (x + 2)/x + 1 C. x2 - (x + 2) D. 2x(x + 2) E. 2x(x + 2)/x + 1

33. Find the integral values of x which satisfy the inequalities –3 < 2 –5x < 12 A. -2, -1 B. –2, 2 C. –1, 0 D. 0,1 E. 1,2

34.

36. If pq + 1 = q2 and t = 1/p – 1/pq express t in terms of q A. 1/p – q B. 1/ q – 1 C. 1/q + 1 D. 1 + q E. 1/ 1- q

39. A right circular cone has a base radius r cm and a vertical 2y0. the height of the cone is A. r tan y0cm B. r sin y0cm C. r cot y0cm D. r cos y0cm E. r cosec y0cm

40. Two fair dice are rolled. What is the probability that both show up the same number of point? A. 1/36 B. 7/36 C. ½ D. 1/3 E. 1/6

41. The larger value of y for which (y - 1)2 = 4y – 7 is A. 2 B. 4 C. 6 D. 7 E. 8

43. If sin q = x/y and 00 < q < 900 then find 1/ tan q A. x/√(y2 – x2) B. x/y C. √y2 –n2 √y2−x2 D. (√y2 – x2)/(√y2 – x2) E. √y2 – x2/y

44.