DE YOUNGESTER'S INTERNATIONAL SCHOOL

FIRST MOCK EXAMINATION- FEBRUARY,2021

 MATHEMATICS TIME: 2 HOURS

NAME: …………..………………………………………..INDEX NO:…………………………….

 PAPER TWO - ESSAY

*Answer* ***four*** *questions* ***only****. All questions carry equal marks*

*All working must be clearly shown. Marks will* ***not*** *be awarded for correct answers without corresponding working*

1. (a) Simplify $\frac{2}{3}$ of 6 ¾ ÷ (2$\frac{4}{15}$– 1$\frac{2}{3}$)

(b) In a class of 100 students, 74 of them read Science and 56 read Music. 30 of them read Science only.

1. Illustrate the information on a Venn diagram
2. How many read in both subjects?
3. How many do not read any of the two subjects?

(c) Benson spends $\frac{1}{5}$ of his pocket money on transport and $\frac{2}{3}$ on food.

1. What fraction of his pocket money does he spend on transport and food?
2. What is the fraction left?
3. (a) Using a scale of 2cm to 1 unit on both axes, draw two perpendicular lines O*x* and O*y* on a graph sheet for the *x-*axis from -5 to 5 and the *y-*axis from -6 to 6.
4. Plot the points *A* (2, 3) and *B* (-3, 4) and join them with a long straight line.
5. Plot on the same graph, the points *C* (4, 2) and *D* (-2, -3) and join them with a long straight line to meet the line through *AB*.
6. Measure the angle between the lines through *AB* and *CD.*
7. Find the coordinates of the point at which the lines through *AB* and *CD* meet.

 (b) Nana Kwame is *x* years old now.

 i) How old was he 5 years ago?

 ii) How old will he be 10 years from now?

 iii) If his age in 10 years’ time will be four time his age 5 years ago, how old is he now?

1. (a) The cost (P), in Ghana Cedis, of producing n items is given by the formula,

 P =$^{3}/\_{4}$ n + 1800. Find the:

1. cost of producing 2,000 items;
2. number of items that will be produced with GH₵2,400.00;
3. cost when no items are produced.

 (b) Simplify 0.084 × 0.81 leaving the answer in standard form.

* 1. × 0.04

 (c) A triangle ABC has vertices A (-2, -4), B (10, 1) and C (3, 8). Find the lengths of the sides of AB and AC. Show that the triangle is isosceles.

1. (a) (i) Ama scored 82, 74 and 90 in three tests. What mark should she score in the fourth test so that her average mark for the four tests would be 85?

(ii) What was her median score in the four tests?

 (b) Make *r* the subject of the relation *t =b*2 *+* 4*r*

 2*ar* **Pg 1**

 (c) A glass cylinder has a curbed surface area of 440cm2. The diameter of the glass is 10cm. Calculate its height. (Take π=$\frac{22}{7}$)

1. (a) A sum of money is divided into four parts in the 4:5:7:9. The difference between the largest and the smallest parts is GH¢4,000.00.

Find:

1. the original sum
2. the smallest amount of the box.

(b) The following table shows the frequency distribution of the marks obtained by

 JHS 3 pupils in a class test.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Marks  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Frequency | 2 | 1 | 3 | *y*  | 4 | 1 | 3 | 1 | 0 | 2 |

 The mean mark of the distribution is 5.

 (i) What is the value of *y*?

(ii) How many pupils wrote the test?

1. Find the modal mark
2. If a pupil is selected at random, what is the probability that he obtained between 4 and 8?
3. (a) The diagram below is a trapezium ABCD with AB = (*x*-2) cm and CD = (2*x* + 6) cm. Find the value of *x* if the area of the trapezium is 150 cm2.

(*x-2*) cm

B

A

(2*x* + 6)cm

C

D

 (b) i. Given that v = u2 – 2qs, make u the subject

 ii. Find the value of u if v=13, q = 1 and s = 2

**Pg 2**

 PAPER 1 I hour

Answer all questions

Think carefully before you shade the answer space; erase completely any answers you wish to change

1. What is the place value of 7 in the number 526.97?

a. 7 hundreds b. 7 tens c. 7 units d. 7 hundredths

1. Find the positive difference between -8 and -14

a. -22 b. -6 c. 6 d. 22

1. Find the smallest number that 60 must be multiplied with to give a perfect square

a. 15 b. 10 c. 6 d. 5

1. A man spends $\frac{1}{4}$ of his monthly income on children’s school fees and $\frac{3}{5}$ on home affairs. What fraction of his come is left? a. $\frac{3}{20}$ b. $\frac{1}{4}$ c. $\frac{3}{5}$ d. $\frac{1}{ 10}$
2. Find the value of 16 × 2 – 3 + 14 ÷ 7. a. 15 b. 31 c. 26 d. 28
3. The sum of angles on a straight link is a. 900 b. 450 c. 1350 d. 1800
4. If the bearing of A from B is 1350, what is the bearing of B from A?

a. 900 b. 450 c. 1350 d. 3150

1. Approximate 5.7255 to the nearest thousandth. a. 5.7 b. 5.725 c. 5.7255 d. 5.726
2. Write in figure: six hundred and fifty-eight million, one hundred and twenty-five thousand and one. a. 658,125,100 b. 658,125,101 c. 658,125,001 d. 658,125,000
3. Find the diameter of a circle whose circumference is 44cm.

 a. 44cm b. 28cm c. 22cm d. 14cm

1. Express 0.00254 in standard form.

a. 2.54 x 10-1  b. 2.54 x 10-2  c. 2.54 x 10-3  d. 2.54 x 10-45

1. Find the sum of prime factors in 60. a. 5 b. 7 c. 8 d. 10
2. Round off 6827 to the nearest ten. a. 6820 b. 6821 c. 6830 d. 6900
3. Express GH¢32.00 as a ratio of GH¢72.00. a. 34:16 b. 16:34 c.9:4 d. 4:9
4. Find the L.C.M. of 20a2 and 32ab. a. 4a b. 16a2b c. 160a2b d. 160ab2
5. A number with more than two factors is known as a. prime b. composite c. surd d. set
6. Find the H.C.F of 108 and 72. a. 9 b. 18 c. 27 d. 36
7. Increase 4500kg by 15%. a. 300kg b. 675kg c. 3825kg d. 5175kg
8. Find the product of the L.C.M. and H.C.F. of the following numbers 9, 12 and 18.

a. 6 b. 18 c. 36 d. 108

1. If GH¢240,000.00 is shared among 3 people in the ratio 5:4:3, what is the least share? a. GH¢100,000.00 b. GH¢96,000.00 c. GH¢80,000.00 d. GH¢60,000.00
2. Find the simple interest on GH¢30,000.00 for 3½ years at 5% per annum.

a. GH¢5,250.00 b. GH¢5,775.00 c. GH¢10,750.00 d. GH¢11,550.00

1. Find the square root of 9 x 16 x 25. a. 3600 b. 360 c. 60 d. 25
2. A desktop computer is bought for GH¢4,500.00 and sold for GH¢3,000.00. Find the loss per cent. a. 45.00% b. 33.33% c. 30.00% d. 15.33%
3. Two sets containing the same number of elements are known as

a. equivalent b. disjoints c. subsets d. parallel

1. Any number raised to the power zero is equal to a. 0 b. 1 c. 2 d. 3
2. Multiply 1001101two by 111two. **Pg 3**

a. 1000011011two b. 1000101two c. 1001001two d. 1010001two

1. A Toyota Hilux uses 100 litres of fuel in a distance of 250km. How many litres of fuel will it use for a distance of 150 kilometres? a. 50 litres b. 60 litres c. 80 litres d. 133 litres
2. Reciprocal of 0.65 to three significant figure is? a. 1.54 b. 1.538 c. 1.53 d. 1.500
3. The length of a basketball pitch can be divided into 12 parts, each 25cm long. How many parts, each 20cm long can be obtained from the pitch? a. 12 b.13 c.14 d.15
4. What is the probability that a pregnant woman will give birth to a boy?

a. 1 b. ½ c. $\frac{1}{3} $d. $\frac{1}{ 4}$

1. Find the set of integers within the interval -2< *x* <2
2. {2, 1, 2} b) {2, 1, 0} c) {-1, 0, 1} d) {-1, 1, 2}
3. Simplify $\frac{2}{3}$ - $\frac{1}{2}$ ÷ $\frac{1}{6}$
4. $\frac{1}{36}$ b) $\frac{1}{12}$ c) 1 d) 6
5. Which of the following is the set of prime factors of 12
6. {1, 3} b) {2, 3} c) {2, 4, 6, 12} d) {2, 3, 4, 6}
7. Two sets with the same elements are known as
8. Disjoint sets b) Empty sets c) Equal sets d) Universal sets
9. The distance round a plane figure is its

(a) perimeter b) area c) volume d) mass

1. Simplify 11-(11-4) + 13 a) -7 b) -17 c) 9 d) 17
2. Correct 0.0846 to two significant figures. a) 0.85 b) 0.09 c) 0.08 d) 0.085
3. Write two hundred and thirty two million, seven hundred and forty two thousand, five hundred and one in words

 a) 230, 742, 510 b) 232, 704, 501 c) 232, 740, 501 d) 232, 742, 501

1. The chord dividing a circle into two equal halves is called

a) segment b) radius c) circumference d) diameter

1. How many meters make 7.2 km? a) 7020m b) 7002m c) 7200m d) 7220m

**Pg 4**