NAME	ADM NO		
SCHOOL	CANDIDATES SIGN		

DATE

121/1 MATHEMATICS FORM 2 END OF TERM THREE TIME: 2 ½ HOURS

END OF TERM (III) EXAMINATION -2019

Kenya Certificate of Secondary Education (K.C.S.E)

121/1 MATHEMATICS FORM 2 END OF TERM THREE TIME: 2 ½ HOURS

INSTRUCTIONS TO THE CANDIDATES

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- Write your name, Admission number, class and name of your school in the spaces provided.
- Answer all questions

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SE		IKS)		
An	swer all the qu	estions in this section		
1.	Evaluate			
	<u>44 - (-28)</u> -	$(8^2)(-12) - (24)$	- ta − e	
	(12) – (2)	96 ÷ (-12) x (9)		

tor more tree revision content visit. www.treet.csepastrees.com 2. Given that P = -4 n = 6 and r = -2 find the value of: $P^{2}(n-r^{2})$

(3mks)

(3mks)

3. Use logarithm tables only, evaluate

nr

(4mks)

4. Jacob a student at Uhuru mixed secondary bought 5 pens and 3 exercise books from Jufa supermarket at Kshs. 135, at the same time Joel, his classmate, also bought 4 pens and 5 exercise books and spent Kshs. 25 more than Jacob. Find the cost of each pen and exercise book (3mks)

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6. Solve for x given that $3^{2x+3} + 1 = 28$

(3mks)

7. Find all the integral values of x which satisfy the simultaneous inequalities $x + 8 > 4x - 6 \ge 3 (4 - x)$

(3mks)

8. Using a ruler and pair of compasses only, construct a quadrilateral ABCD in which AB = 4cm, BC = 6cm, AD = 3cm, angle $ABC = 135^{\circ}$ and angle $DAB = 60^{\circ}$. Measure the size of angle BCD

(4mks)

9. A car left Meru for Embu a distance of 100km at an average speed of 60km/h at 8.00am. At 8.30am a bus left Embu for Meru at an average speed of 40km/h. At what time did they meet.

(3mks)

tent visit. www.treekcsepe 10. A cylindrical pipe 5 metres long has an internal diameter 28 millimetres and an external diameter of 42 millimeters. The density of the material that makes the pipe is 1.45 of g/cm³. Calculate the mass of the pipe in kilograms. (take $\pi^{\frac{2}{2}/7}$) (4mks) tor more

12. Ruto is 2 ¹/₄ times as old as his son. Five years ago, the ratio of their ages was 8:3. What will be the their ages 6 years from now? (3mks)

13. Express the recurring decimal 3.256 as a fraction in its simplest form

(3mks)

(2mks)

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14. A Kenyan Bank buys and sells foreign currencies as shown below

	Buy (Kshs.)	Sell (Kshs.)		
1 Euro	84.15	84.26		
50 Japanese Yen	65.37	65.45		

A Japanese traveling from France arrives in Kenya with 5000 Euros. He converts all the 5000 Euros to Kenya shillings at the bank. While in Kenya he spends a total of Kshs. 289,850 and then converts the remaining Kshs. To Japanese Yen at the bank. Calculate the amount in Japanese Yen that he receives. (3mks)

15. Given
$$a = \begin{pmatrix} 2 \\ 3 \end{pmatrix}$$
 and $b = \begin{pmatrix} -7 \\ 4 \end{pmatrix}$

.treekcsepastpapers.com Determine 2a + b hence |2a + b| correct to 3 decimal places.

(3mks)

tor more tree revision content 16.32 men working at the rate of 9hrs a day can complete a piece of work in 7 days. How many more men working at the rate of 8hrs a day would complete the same work in 6 days? (3mks)

SECTION II (50 MARKS)

Answer all the questions in this section

17. Two points P and Q are P(3, -2) and Q (5, 10)

a) Determine the gradient of the line PQ

(2mks)

b) Find the equation of the line through the points P and Q in the form y = mx+c(3mks)

8.

c) Find the coordinates of point M the midpoint of PQ

(2mks)

Hee tevision content visit. www.treekcsepastpagers.com d) Another line passes through point M and perpendicular to PQ. Find its equation in the form y = mx + c(3mks) 40

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18. The figure below shows the circles with centres A and B and of radii 7.2cm and 10cm respectively. Centres A and B are 12cm apart and AP:PB=1:2

D

10 cm



A

a) Size of angle CAD

(2mks)

b) Size of angle CBD

(2mks)

Hee revision content visit. www.freekcsepastoapers.com c) Area of the shaded region (Take $\pi = 3.142$)

(6mks)

19. The boundaries AB, BC, CD and DA of a ranch are straight lines such that B is 16km on a bearing of 040° from A. C is directly South of B and East of A and D is 12km on a bearing of 120° from C. a) Using a scale of 1cm to represent 2km, show the above information in a scale drawing (3mks)

- b). From the scale drawing, determine (i) The distance in km of A from D
 - (ii) The bearing of A and D

hent visit. www.treekcsepastpapers.com (iii)Calculate the area of the ranch ABCD in square kilometers tor more tree revis

(2mks)

(2mks)

(3mks)

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- 20. ABC is a triangle such that A (3, 3) B (6, 6) and C (6, 3). A¹ (-3,3) B¹(-6,6) and C¹ (-3,6) is the image of ABC
 - a) Draw both triangles ABC and $A^{1}B^{1}C^{1}$ on the grid provided (2mks)
 - b) Describe a single transformation which maps ABC onto $A^{1}B^{1}C^{1}$ (3mks)
 - c) $A^{11}B^{11}BC^{11}$ is the image of $A^{1}B^{1}C^{1}$ under a translation vector $T = \begin{pmatrix} -2 \\ 1 \end{pmatrix}$. Draw $A^{11}B1^{1}C^{11}$ and state its coordinates (3mks)
 - d) Find A¹¹¹B¹¹¹C¹¹¹ the image of A¹¹B¹¹C¹¹ under an enlargement scale factor -1 centre (-2, 1) and state the coordinates
 (2mks)

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21. The table below shows the marks obtained in a math test

Marks	40-44	45-49	50-54 :	55-59	60-64	65-69	70-74	75-79	80-84
No. of	5	5	7	6	13	3	5	3	3
students		市	100				19.2	1 - 1	

a) State the modal class

(2mks)

b) Calculate the mean

(4mks)

(4mks)

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