

UNIVERSITY OF NAMIBIA

SUBJECT	MATURE AGE ENTRY TEST	
SUBJECT AREA	NUMERACY(SCIENCE-RELATED)	
DATE	02 August 2019	
DURATION	2 HOURS	MARKS:100

This question paper consists of 5 pages including the cover page

Instructions

- Show your calculations.
- Calculators are allowed
- Round answers to one Decimal Place where Needed
- Answer all questions in the given examination answer book

1. A child scored 12 out of 40 in a spelling test. What is this score as a percentage? [3]
2. A class raised N\$150.00 for children in need by placing 50c coins inside a large piggy bank. How many 50c coins were used? [3]
3. In a year group of 150 pupils, 70% achieved grade A or B in a test. 35 pupils achieved grade A. How many pupils received grade B? [4]
4. A school trip to Etosha national park was budgeted at N\$ 2560 per learner. 1 quarter of the cost was to pay for supply cover at the school. 40% of the cost was used for accommodation, 20 % transport, 10% food and 1 twenty fifth of the cost was for entrance ticket to the park
 - (a) How much did each student pay for supply cover at the school [4]
 - (b) How much money was used for accommodation ? [3]
 - (c) How much was spent on transport ? [3]
 - (d) How much was budgeted to pay for transport. [3]
 - (e) What was the total amount spent on food [3]
 - (f) How much was budgeted for the entrance ticket? [3]
5. The time of swing of a simple pendulum is given by the formula $t = 2\pi\sqrt{\frac{l}{g}}$. Find t when $l = 90$ and $g = 10$. Take $\pi = 3.14$ [3]
6. Simplify the following algebraic expressions.
 - (a) $14xy + 5xy - 7xy + 2xy$ [3]
 - (b) $3(a - b) - 2(2a - 3b) + 4(a - 3b)$ [4]
7. What value of x satisfies both $y = 2x + 3$ and $y = 3$ [3]
8. In the following questions the answer is either 'true' or 'false'. Indicate the appropriate word for each problem:
 - (a) If $\frac{x}{7} = 3$ then $x = 21$ [2]
 - i. True
 - ii. False
 - (b) If $2(x + 4) - 5(x - 7) = 7$ then $x = 12$ [3]
 - i. True

ii. False

(c) If $\frac{2x-3}{2} = \frac{x-6}{5}$ then $x = 3$ [3]

i. True

ii. False

9. Amy is n years old.

Bobby, her brother, is 9 years older than Amy.

Their mother is 3 times as old as Amy.

Their father is twice as old as Bobby.

(a) Write down expressions, in terms of n , for

i. Bobby's age, [2]

ii. their mother's age, [2]

iii. their father's age. [2]

(b) The sum of the ages of the four members of the family is 139.

i. Write down the equation satisfied by n . [4]

ii. Solve the equation to find the value of n . [4]

iii. Hence Find the mother's age when Bobby was born. [5]

10. Re-arrange the following expressions in order to make the symbol which follows each example the subject of the formula:

(a) $P = \frac{N+2}{D}; N$ [3]

(b) $k = \frac{brt}{v-b}; b$ [3]

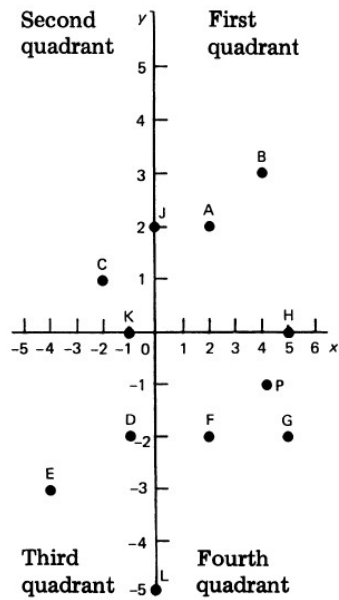
(c) $A = P + \frac{PRT}{100}; N$ [3]

11. Expand the following and Simplify

(a) $3x(1-x)$ [2]

(b) $(1-x)(1+x)$ [3]

12. Consider the graph and answer the following questions below.



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(a) Write down the coordinates of the (x, y) of the following points [2 marks each]

- i. **A**
- ii. **E**
- iii. **H**
- iv. **J**
- v. **K**

(b) Name the type of triangle you get, when you join the points $K\hat{A}H$ [4]

(c) In which quadrant is the point $(-2, 1)$ located ? [2]

13. The following table shows measurements taken of a car moving along a road. The table shows distance moved from a garage at certain intervals of time.

Time (Minutes)	0	10	20	30	40	50	60	70	80	90
Distance (miles)	0	10	20	20	20	40	60	40	20	0

(a) What is the car's speed during the first 20 minutes? *hint: Distance = Speed $\times$ Time*
[3]

- (b) What is happening between 20 and 40 minutes? [3]
- (c) What does the table tell us about the journey of the car? [3]
- (d) What is the total distance moved by the car? [3]