



**AMREF INTERNATIONAL TRAINING CENTER**

**CANDIDATE WRITTEN ASSESSMENT TOOL**

**Qualification: COUNSELLING PSYCHOLOGIST**

**Unit code: HE/OS/PSY/BC/02/5/A**

**Unit (s) of competency: NUMERACY SKILLS**

**CANDIDATE WRITTEN ASSESSMENT**

**3 HOURS**

**CANDIDATES INSTRUCTIONS**

1. Attempt all questions in section A, B and C.
2. You are provided with a separate answer booklet.
3. Write your name and registration code on the answer booklet.
4. Do not write on the question paper.
5. Marks for each question are indicated in the brackets ()

***This paper consists of SEVEN (7) printed pages***

***Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing***

**SECTION A (20MARKS)**  
**(Attempt all questions)**

- 1 Which one of the following is not a type of a fraction? (1mk)  
A. Mixed numbers  
B. Improper fraction  
C. Proper fraction  
D. Numerical fraction
- 2 What is the slope of the line with the equation  $2x + 3y = 6$  (1mk)  
A. -6  
B. -3  
C. -2  
D.  $-\frac{2}{3}$
- 3 Nice Rice Company sold 2.5 tons of rice in 2kg packets. How many packets were sold? (1mk)  
A. 1.25  
B. 1250  
C. 2500  
D. 5
- 4 Which list comprises of the measures of central tendencies? (1mk)  
A. Mean ,integral and mode  
B. Mode, median and mean  
C. Mode, derivative and integral  
D. Integral, average and median
- 5 When a rectangle is rotated about one of its line of symmetry, which figure will be formed? (1mk)  
A. Cone  
B. Cube  
C. Cylinder  
D. Triangular Prism
- 6 Evaluate  $0.003 - 0.0018 - 0.01 + 0.42$  (1mk)  
A. 0.4112  
B. 0.4222  
C. 0.4312  
D. 0.4348

- 7 Which of the following is the smallest fraction? (1mk)  
 $\frac{4}{5}$ ,  $\frac{11}{7}$ ,  $\frac{7}{9}$ ,  $\frac{7}{8}$
- A.  $\frac{4}{5}$   
B.  $\frac{11}{7}$   
C.  $\frac{7}{9}$   
D.  $\frac{7}{8}$
- 8 The area of a sector whose radius is 7cm is  $23.1 \text{ cm}^2$ . Find the angle of the sector (1mk)  
A.  $154^\circ$   
B.  $54^\circ$   
C.  $27^\circ$   
D.  $108^\circ$
- 9 The following are 2-D objects except? (1mk)  
A. Circle  
B. Cuboid  
C. Triangle  
D. Rectangle
- 10 Find the value of  $x$  in  $2x + 1 = 6$  (1mk)  
A. 5  
B.  $\frac{7}{2}$   
C.  $\frac{7}{2}$   
D. 7
- 11 The following are methods of data sampling except? (1mk)  
A. Probability sampling  
B. Systematic sampling  
C. Clustered sampling  
D. Quota sampling
- 12 Which 3D shape has six rectangular faces? (1mk)  
A. Cube  
B. Cuboid  
C. Prism  
D. Tetrahedron

- 13 The mean of three numbers is calculated using the formula  $Q = \frac{x+y+z}{3}$ . Find the value of Q given that when  $x=8$ ,  $y=17$  and  $z=2$  (1mk)
- A. 9
  - B. 27
  - C. 6
  - D. 18
- 14 A ratio equivalent to 3:7 is? (1mk)
- A. 3:9
  - B. 6:9
  - C. 9:21
  - D. 18:49
- 15 The difference between the largest and smallest value is the? (1mk)
- A. Variable
  - B. Inter quartile range
  - C. Range
  - D. Coefficient of variation
- 16 A farmer decides to sell 25% of his 500 cows. How many cows did he sell? (1mk)
- A. 125
  - B. 127
  - C. 200
  - D. 250
- 17 Which of the following type of an angle is less than  $90^\circ$ ? (1mk)
- A. Reflex
  - B. Acute
  - C. Obtuse
  - D. Straight
- 18 Find  $-10 + 3 - (-4) + 5$  (1mk)
- A. 2
  - B. -12
  - C. -4
  - D. 16
- 19 For a practical task, a primary teacher needs 25 milliliters of liquid for each pupil. There are 28 pupils in the class. How many milliliters of liquid are needed? (1mk)
- A. 53 mm
  - B. 700 mm
  - C. 753 mm
  - D. 728 mm

- 20 A pupil scores 45.5% in Test 1 and 64.5% in test 2. Calculate the pupil's average mark, (1mk) assuming they were weighed equally?
- A. 62%  
B. 50%  
C. 55%  
D. 58%.

**SECTION: B (40 MARKS)****(Attempt all questions)**

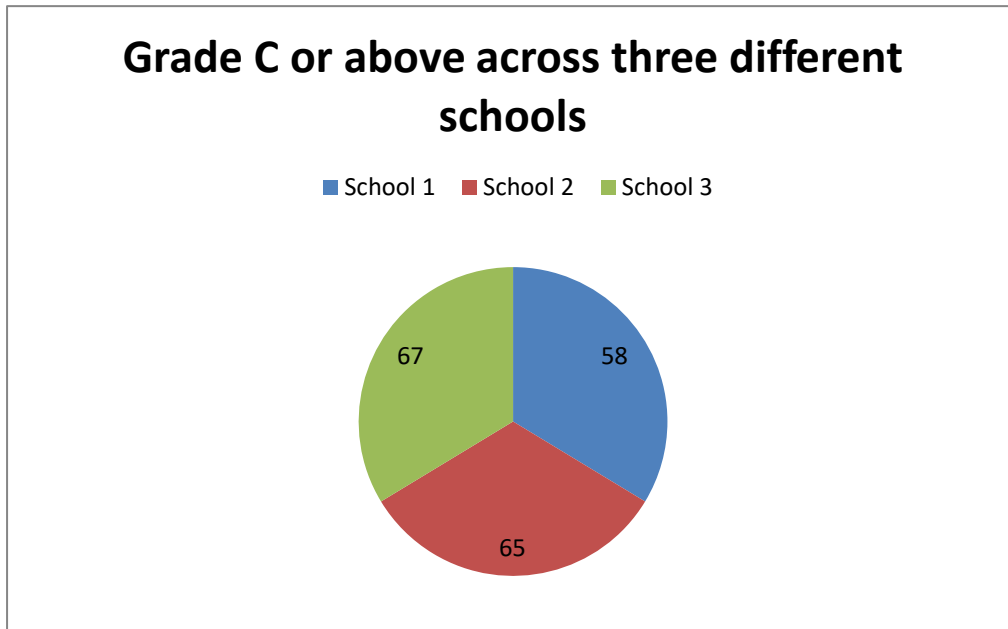
- 21 For a science experiment a teacher needed 95 cubic centimeters of vinegar for each pupil. There were 20 pupils in the class. Vinegar comes in 1000 cubic centimeter bottles. How many bottles of vinegar were needed? (4mks)
- 22 Multiply 327 by 600 (3mks)
- 23 In a year group of 110 pupils, 66 pupils have school dinners. What proportion of the year group does not have school dinners? Give your answers as a decimal (3mks)
- 24 The moving session in AMREF began at 09:25. There were three lessons of 50 minutes each and a break of 20 minutes. At what time did the morning session end? Give your answer to 24 -Hour system (4mks)
- 25 Pupils from the cycling club cycled along the south coast. The table below shows the time they cycled each day and the average speed. (6mks)

Day	Time(hours)	Average speed(in kilometers per hour)
Monday	5	16
Tuesday	6	14
Wednesday	4.5	18
Thursday	5.5	22
Friday	6.5	20

Determine the day they cycle the longest distance

- 26 Evaluate the root of  $2x^2 - 5x - 3 = 0$  using the quadratic formula (4mks)
- 27 A tin of shoe polish is 8cm in diameter and 2cm high. The shoe polish must be stored in an upright position. Find the number of tins that will fit into the carton of dimensions 40cm by 32cm by 10cm. (4mks)
- 28 Convert  $(0.4\dot{5})$  to a fraction (4mks)

- 29 The pie chart below shows the number of pupils who got a grade C or better in science in three different schools



Calculate

- i) The percentage of pupils who got grade C or above in science in school 3 (2mks)
  - ii) The percentage of pupils who got grade C or above in science in school 1 (2mks)
  - iii) The proportion of pupils getting a grade C above in science at school 2 (1mk)
- 30 The formula  $C = \frac{25}{45}(F - 160)$  is used to convert temperatures to degrees Fahrenheit's to degrees Celsius. Calculate:
- a) The value of C when F=205 (1mk)
  - b) The value of F when C=125 (2mk)

**SECTION: C (40MKS)**  
(Attempt any two questions)

- 31 The age categories of persons treated in a hospital for a week is shown in the table below

Age	0-10	11-20	21-30	31-40	41-50	51-60
Number of persons	30	40	60	35	25	15

- i) State the modal class (2mks)
- ii) How many people above 30 years were treated (3mks)
- iii) Find the median of the distribution (5mks)
- iv) Find the mean of the data (5mks)
- v) Determine the standard deviation (5mks)

- 32 A parallelogram has a base of 20cm and an area of  $660\text{cm}^2$ .
- i) What is its height in m? (4mks)
  - ii) Using a compass and a ruler only, construct a triangle such that  $AB=6\text{cm}$ ,  $BC=5\text{cm}$  and angle  $ABC=67.5^\circ$ . Measure the length of AC (6mks)
  - iii) A solid cylinder has a base diameter of 12cm and a perpendicular height of 0.2m. Calculate:
    - a) Volume in liters (5mks)
    - b) Total surface area in  $\text{cm}^2$  (5mks)
- 33 a) Given that  $n = \frac{IR}{E-IR}$ , find the value of I given that  $n=2.4$ ,  $r=0.01$ ,  $R=3.6$  and  $E=8.5$  (5mks)
- a) Abdi walked due East from a hostel 100m South of a borehole, then to the school library from which the bearing of the borehole is  $315^\circ$ . He then walked on bearing of  $030^\circ$  to the water tank and finally straight to the borehole. Using a scale of 1cm to represent 20m, construct a diagram to show the positions of tank, borehole, dormitory and library. (9mks)
- i) Find the distance and the bearing of the borehole from the water tank (3mks)
  - ii) Calculate the total distance covered by Abdi. (3mks)