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UNIVERSITY OF EDUCATION, WINNEBA  
MATURE STUDENTS' ENTRANCE EXAMINATION (2013)

TIME: 2 Hours

APTITUDE TEST: CODE GAT III

**INSTRUCTIONS:**

This examination covers English, Mathematics, Integrated Science and General Knowledge. Candidates must **ANSWER all questions** by shading the letter of the correct answer on the shading sheet provided.

**ENGLISH**

**Read the following passage carefully and answer all the questions on it. In each case, shade the letter of the correct option on the shading sheet**

French military action against Islamists in northern Mali, launched January 11, was a long time coming. The West African nation's descent into chaos began a year ago when an alliance of tribal Tuareg and Islamists, including al Qaeda in the Islamic Maghreb, began a rebellion in the northern Mali. The Islamists were well funded and well armed. They had earned tens of millions of dollars kidnapping and ransoming Westerners and tens of millions more smuggling South American cocaine across the Sahara to Europe. At the end of 2011, when Tuareg troops loyal to former Libyan leader, Muammar Ghaddafi, fled south with their weapons after Gaddafi's fall, the Islamists went shopping for arms. In March 2012, the outmatched Malian army mutinied, and the rebels used the chaos to seize the northern half of the country. Then the Islamists turned on their Tuareg allies before imposing Shari'a, establishing an al Qaeda state just south of Europe.

France is the lead international player in French speaking West Africa, a legacy of the country's colonial rule. Security issues there concern Paris more than most. Malian Islamists have repeatedly vowed to attack France, and French intelligence officials tell TIME that French jihadists are making their way to Mali. But at times, France's historic presence has gone hand in hand with old-school practices: support of dubious Big Men – sometimes financially, sometimes with firepower – in return for access to oil and minerals.

That is something France had vowed to change – but change isn't easy. While French President Francois Hollande drew a plan to recapture northern Mali last year that placed the Malian army and the West African regional bloc ECOWAS in the lead, that strategy was "crap", in the delicate words of US Ambassador to the U.N. Susan Rice. Despite years of training by U.S. special operations troops, neither can be relied on.

The French attack, initiated after the Islamists resumed their advance south on Jan. 9, was a tacit admission that Africa can't always handle African problems. But France is in a precarious position. Paris may insist that Mali will be a quick and surgical special forces war – but that's precisely what the U.S said about Afghanistan. "One knows how these military interventions begin," the French daily *Le Monde* said on Jan. 14. "One never knows how they end – or rather, one knows lots turned out very badly."

BY ALEX PERRY – TIME MAGAZINE (JANUARY 28, 2013)

1. Which of the following is **not true** of the passage?
  - A. The Islamists had enough weapons.
  - B. The Islamists had a problem with financing.
  - C. The Islamists engaged in the smuggling of cocaine.
  - D. The Islamists and the tribal Tuareg were allies.
  - E. None of these



2. What event gave birth to the seizure of northern Mali?
  - A. French military action against the Islamists in northern Mali.
  - B. The Islamists kidnapped and ransomed Westerners
  - C. The fall of Muammar Ghaddafi
  - D. The mutiny among the Malian soldiers
  - E. None of these.
3. Which of the following statements is **true**, according to the passage?
  - A. Africa can always tackle African problems judiciously.
  - B. Malian Islamists have never resolved to attack France.
  - C. The French were swift in launching a military action against the Islamists
  - D. The Islamists later failed to attack their Tuareg allies
  - E. None of these
4. ... that strategy was "crap". This means the strategy was
  - A. normal
  - B. excellent
  - C. very bad
  - D. well executed
  - E. none of these
5. Under what condition does France sometimes intervene to give security to Mali?
  - A. When in return she can get access to oil and minerals.
  - B. When she has to support dubious Big Men.
  - C. When she is financially sound
  - D. When she has abundant firepower
  - E. None of these.
6. Which of the following is a suitable heading for the passage?
  - A. America's assessment of France's military ability.
  - B. The influence of France in French speaking West Africa.
  - C. Northern Mali is besieged by Americans.
  - D. French military intervention in northern Mali.
  - E. None of these

Fill in the slot in each of the following sentences with the correct answer from the options provided

7. .... I forget, I can't attend tomorrow's meeting
  - A. List
  - B. Less
  - C. Lest
  - D. Least
  - E. None of these
8. If it rained, then it .....
  - A. thundered
  - B. snowed
  - C. clouded
  - D. fogged
  - E. None of these
9. The strong ought not to use their ..... to do what is not right.
  - fortune
  - B. wealth
  - C. power
  - D. strength
  - E. None of these
10. Not all nephews are given the opportunity to have ..... to their uncle's property.
  - A. access
  - B. assess
  - C. asses
  - D. assets
  - E. None of these

11. All ..... the chief said was reported in the dailies.  
 A. which B. what ☒ C. that D. this E. None of these.
12. The man, with his wife and children, ..... coming to visit us next week.  
☒ A. are B. is C. has been D. had been E. None of these.
13. Nowadays, extra classes in our basic schools ..... the order of the day.  
 A. become ☒ B. becomes C. became D. has become E. None of these.

Select from each group of four sentences below the sentence which has been expressed in the most suitable way.

14. A. She asked him why he so hastily had left.  
 B. She asked him why had he left so hastily.  
 C. She asked him why had he so hastily left.  
☒ D. She asked him why he had left so hastily.  
 E. None of these
15. A. For two days as well as the electricity was the water cut off.  
 B. The water for two days as well as the electricity was cut off.  
☒ C. For two days the water as well as the electricity was cut off.  
 D. As well as the electricity the water was cut off.  
 E. None of these
16. A. If I had known that I was coming to Ghana, I would have studied English in Cuba.  
☒ B. If I knew that I was coming to Ghana, I would have studied English in Cuba.  
 C. If I know that I would come to Ghana, I would have studied English in Cuba.  
 D. If I knew that I had to come to Ghana, I would have studied English in Cuba.  
 E. None of these
17. ☒ A. Nobody came, didn't they?  
 B. Nobody came, did they?  
 C. Nobody came, didn't nobody?  
 D. Nobody came, did somebody?  
 E. None of these.
18. ☒ A. Somebody came, didn't they?  
 B. Somebody came, did they?  
 C. Somebody came, didn't somebody?  
 D. Somebody came, did nobody?  
 E. None of these

Choose from A to E the word/words which most suitably complete(s) each of the following sentences

19. The ..... of what she was cooking filled the whole compound.  
 A. scent ☒ B. aroma C. perfume D. fragrance E. none of these

20. Atumbila was caught distributing political -----  
 A. brochures B. circulars ☒ C. bulletins D. pamphlets E. none of these
21. The little baby ..... towards its mother with outstretched arms.  
 A. strode ☒ B. toddled C. strutted D. trudged E. none of these
22. The pastor can't come today because he has ..... engagement  
 A. a former B. a preceding C. a prior ☒ D. an audience E. None of these.

From answers (A-E) choose the one which is *nearest in meaning* to the underlined expression as it is used in each of the following expressions.

23. The decision you have taken is irrevocable.  
 A. irrefutable B. irresponsible C. irreproachable ☒ D. irreversible E. None of these
24. For three days it rained incessantly.  
 A. repeatedly ☒ B. continuously C. unfailingly D. recurrently E. None of these
25. Before he took action, he verified what had been said.  
☒ A. considered B. established C. checked D. inquired
26. When he expresses his opinions, he is usually very blunt.  
☒ A. plain-spoken B. dull C. outspoken D. stupid E. None of these

Choose from the answers provided (A-E) the one which is *most nearly opposite in meaning* to the underlined expression as it is used in each of the following sentences.

27. Kofi's evidence obscured the facts of the case.  
 A. brightened B. reflected ☒ C. illustrated D. clarified E. None of these.
28. The apathy of the general public as regards the recent political development is obvious  
☒ A. enthusiasm B. agitation C. excitement D. elation E. None of these
29. The relations between the two countries deteriorated last year.  
 A. increased B. revived C. improved D. recommenced E. None of these
30. He gave evasive answers to all our questions.  
☒ A. direct B. outspoken C. simple D. truthful E. None of these

### MATHEMATICS

31. Simplify  $\begin{pmatrix} 2 \\ -3 \end{pmatrix} - \begin{pmatrix} -1 \\ 5 \end{pmatrix}$   
 A.  $\begin{pmatrix} -3 \\ 8 \end{pmatrix}$  B.  $\begin{pmatrix} 3 \\ -8 \end{pmatrix}$  C.  $\begin{pmatrix} -3 \\ -8 \end{pmatrix}$  D.  $\begin{pmatrix} 3 \\ 8 \end{pmatrix}$  E. None of these
32. If  $P = 7$ ,  $a = 16$ ,  $b = -5$  and  $C = 3$ ; evaluate  $P^2 - \frac{(a-b)}{C}$   
 A. 40 B. 41 ☒ C. 42 D. 43 E. None of these

Questions (33) and (34) are based on the following: If  $X = \begin{pmatrix} -3 \\ 2 \end{pmatrix}$  and  $Y = \begin{pmatrix} 4 \\ -1 \end{pmatrix}$  then

33. Find  $x + 2y$ : A.  $\begin{pmatrix} 5 \\ -2 \end{pmatrix}$  B.  $\begin{pmatrix} 6 \\ 0 \end{pmatrix}$  C.  $\begin{pmatrix} 6 \\ -1 \end{pmatrix}$  D.  $\begin{pmatrix} 7 \\ -3 \end{pmatrix}$  E. None of these

34. Find  $3x - y$ : A.  $\begin{pmatrix} -13 \\ 6 \end{pmatrix}$  B.  $\begin{pmatrix} -13 \\ 7 \end{pmatrix}$  C.  $\begin{pmatrix} -14 \\ 6 \end{pmatrix}$  D.  $\begin{pmatrix} -14 \\ 7 \end{pmatrix}$  E. None of these.

35. A ladder leans against a wall. The end of the ladder touches the wall 12cm from the ground. The foot of the ladder is 9cm. What is the length of the ladder?

- A. 9cm B. 11cm C. 13. D. 15cm E. None of these

36. Solve:  $5(a-5) - \frac{1}{2}(2a+6) = 4$  A.  $a = 8$  B.  $a = 10$  C. 8.7 D. 9.5 E. None of these

37. If  $r = \frac{3}{1}$  and  $q = \frac{-2}{1}$ , calculate  $(r + 2q)$

- A.  $\begin{pmatrix} -2 \\ 18 \end{pmatrix}$  B.  $\begin{pmatrix} -3 \\ 18 \end{pmatrix}$  C.  $\begin{pmatrix} -4 \\ 18 \end{pmatrix}$  D.  $\begin{pmatrix} -5 \\ 18 \end{pmatrix}$  E. None of these

38. Ato bought a camera at GH¢65.00. After one year Ato sold the camera valued at 75% of the price. If he sold the camera for GH¢ 55.70, calculate his profit over the cost price.

- A. GH¢5.59 B. GH¢6.69 C. GH¢7.95 D. GH¢8.95 E. None of these

39. There are 20 students in a hostel 16 of whom are fluent in English whereas 10 of them are fluent in English. Each student is fluent in, at least, one of the two languages. Calculate the number of students who are fluent in both English and French.

- A. 5 B. 8 C. 7 D. 6 E. None of these.

40. The sum of the ages of two sisters, Afua and Ekuwa. Afua's age is two-thirds Ekuwa's age. Find Afua's age.

- A. 14 B. 15 C. 13 D. 12 E. None of these.

41. Solve the following equation:  $\frac{2x-1}{3} - \frac{x-2}{4} = 1$

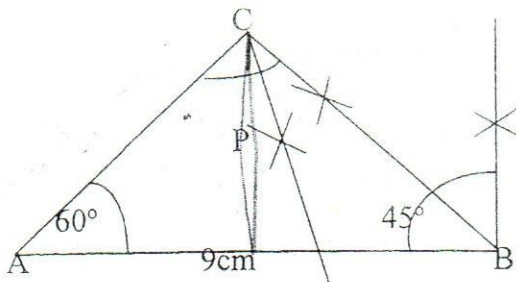
- A.  $x = 2$  B.  $x = 2.5$  C.  $x = 3$  D.  $x = 3.5$  E. None of these

42. The table below gives the frequency distribution of the marks obtained in a class test by a group of 64 pupils.

MARKS (over 10)	FREQUENCY (f)
2	9
3	14
4	13
5	10
6	5
7	8
8	2
9	3
	EF = 64

A pupil is chosen at random from the class. What is the probability that the pupil chosen obtained 7 marks? A.  $\frac{1}{9}$  B.  $\frac{1}{8}$  C.  $\frac{1}{7}$  D.  $\frac{1}{6}$  E. None of these

43.



In the above diagram  $AB = 9\text{cm}$ , angle  $BAC = 60^\circ$  and angle  $ABC = 45^\circ$ . A line is constructed from point C perpendicular AB, meeting AB at P. Calculate the value of angle ACP.

- A.  $25^\circ$     B.  $30^\circ$     C.  $35^\circ$     D.  $40^\circ$     E. None of these

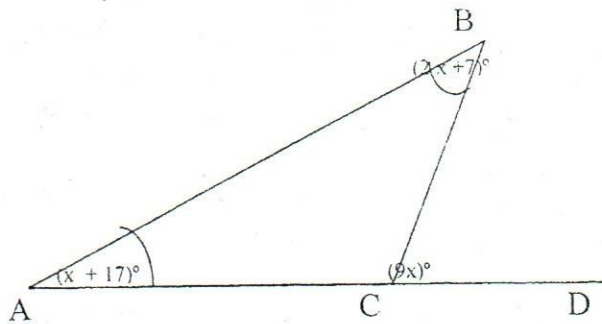
44. Musa is  $n$  years old. If his age in 10 years time would be four times his age five years ago, then how old is he now?

- A. 19 years    B. 50 years    C. 29 years    D. 20 years    E. None of these

45. A circle has a circumference of 44cm; calculate its radius, if  $\pi = \frac{22}{7}$

- A. 17cm    B. 13cm    C. 10cm    D. 7cm    E. None of these

Study the diagram below meticulously and answer questions (50) and (51)



46. Find the value of  $x$ .    A.  $24^\circ$     B.  $34^\circ$     C.  $44^\circ$     D.  $14^\circ$     E. None of these

47. Find angle ACB    A.  $144^\circ$     B.  $133^\circ$     C.  $122^\circ$     D.  $155^\circ$     E. None of these

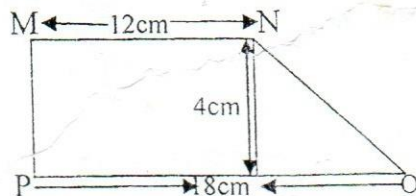
48. Alhaji Sokoto and Alhaji English shared a profit of GH¢1,743,000.00 earned from their business in ratio 3:4. Calculate Alhaji English's share of the profit.

- A. GH¢ 696,000    B. GH¢ 969,000    C. GH¢ 747,000    D. GH¢ 996,000

49. What is the name of a line segment drawn to join any two points on the circumference of a circle?

- A. Radius    B. Segment    C. Sector    D. Chord    E. None of these

50. Find the area of trapezium MNOP



- A.  $120\text{cm}^2$     B.  $72\text{cm}^2$     C.  $60\text{cm}^2$     D.  $48\text{cm}^2$     E. None of these

# INTEGRATED SCIENCE

51. Common materials around us such as water, air, metals, plants, and animals constitute  
A. matter    B. stalactites    C. stalagmites    D. fusion    E. None of these.
52. Which of the following structures is found in plant cells but not in animal cells?  
A. Nucleus    B. Chloroplasts    C. Cell membrane    D. Cytoplasm    E. None of these
53. What does the term protoplasm refer to?  
A. Cytoplasm and Nucleus    B. Cytoplasm and Cell membrane    C. Cytoplasm and Mitochondria    D. None of these
54. Which of the following best describes reproduction in a flowering plant?  
A. pollination, flowering, seed and fruit formation, seed dispersal  
✓ B. flower formation, pollination, fertilization, seed and fruit formation, seed dispersal  
C. formation, pollination, fertilization, fruit formation, seed dispersal  
D. flowers, fruit, seed  
E. None of these
55. In a flowering plant the carpels are made up of (I Pollen, II Stigma, III Style, IV Ovary)  
A. I and II only    B. II and III only    C. II, III and IV only,    D. IV only
56. Which of the following is not required for photosynthesis to take place?  
A. Carbon (IV) oxide    B. Oxygen    C. Water    D. Chlorophyll    E. None of these
57. Which of the following substances is likely to be a limiting factor for photosynthesis in plants on a normal day in Ghana?  
A. Light    B. Temperature    C. carbon (IV) oxide    D. satellite    E. None of these
58. In the alimentary canal, most absorption of digested food occurs in the -----  
A. oesophagus    B. duodenum    C. ileum    D. colon    E. None of these
59. The mole quantity in chlorine quantity is .....  
A. 35.5 amu    B. 35.0 amu    C. 37.0 amu    D.  $6.02 \times 10^{23}$     E. None of these
60. Calculate the molar mass in washing soda,  $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$   
given that Na = 23.0, C = 12.0, O = 16.0, H = 1.0  
A. 106    B. 286    C. 180    D. 2860    E. None of these
61. An isotope of uranium has a mass number of 235 and an atomic number of 92; find of electrons and neutrons, respectively, in an atom of uranium 235  
A. Electrons 92, neutrons 51,    B. Electrons 92, neutrons 143  
C. Electrons 92, neutrons 184    D. Electrons 90, neutrons 92    E. None of these
62. The type of bonding found in sodium chloride is -----  
A. dative    B. covalent    C. ionic    D. co-ordinate    E. None of these.
63. Which of these substances is a carbohydrate?  
A. Amino acids    B. Fatty acids    C. Bacon    D. Sucrose    E. None of these
64. How long is the average human pregnancy?  
A. 30 weeks    B. 35 weeks    C. 40 weeks    D. 45 weeks    E. None of these
65. Which of the following foods will supply you with plenty of proteins?  
A. Irish potato    B. Banana    C. Carrots    D. Cabbage    E. None of these
66. Which of the following deficiency diseases is the result of lack of protein in the diet?  
A. Hypertension    B. Beriberi    C. Scurvy    D. Diabetes    E. None of these
67. How many moles of sodium trioxonitrate(V),  $\text{NaNO}_3$ , are needed to prepare 500cm<sup>3</sup> of 0.25M solution? (Na = 23.0, N = 14.0, O = 16.0)  
A. 0.50    B. 0.125    C. 1.25    D. 10.625    E. None of these

68. Calculate the mass in grams needed to prepare  $400\text{cm}^3$  of  $0.15\text{M}$  KOH solution.

(K = 39.0; O = 16.0; H = 1.0)

- A. 3.36      B. 24.4      C. 25.6      D. 28.7      E. None of these
69. Two liquids which have boiling points which are very close together can be separated completely by the process of ..... A. simple distillation      B. fractional distillation  
C. separating funnel      D. evaporation      E. None of these
70. Throughout the fertile life of a woman from the age of puberty to around 50 years of age, the sequence of events that occur approximately every four weeks is described as  
A. ovulation      B. gestation      C. menstrual cycle      D. implantation

### GENERAL KNOWLEDGE

71. This country has the best welfare system and the highest standard of living in the world. It is known as the Land of Christmas Trees and the Land of Midnight Sun  
☒ A. Netherlands      B. Poland      C. Cuba      D. France      E. None of these.
72. If you visit ..... you will surely see fjords, stalactites, stalagmites and snow in winter  
A. Israel      B. South Africa      C. Norway      D. Libya      E. None of these
73. Last year, Queen Elizabeth celebrated her Diamond Jubilee as a monarch. This means at the time of the celebration she had been the Queen of England for .....  
A. 45 years      B. 50 years      C. 55 years      D. 60 years      E. None of these.
74. In which month and year did Ghana celebrate her Golden Jubilee?  
☒ A. March 2007      B. April 1997      C. May 1977      D. July 1957      E. None of these
75. Her father-in-law was a Kenyan but she happened to be the first black to be the first lady of the USA  
A. Nancy Reagan      ☒ B. Michelle Obama      C. Hillary Clinton      D. Oprah Winfrey
76. Adolescent is any individual between ...  
A. 9-19 years      B. 10-19 years      C. 11-19 years      D. 12-20 years      E. None of these
77. The chemical that causes physical changes in the body is ...  
☒ A. hormones      B. vitamins      C. carbohydrates      D. anointing oil      E. none of these
78. Which of the following does not occur in males during puberty?  
A. Muscles of the body become developed      B. chest and shoulder become broader  
C. Voice deepens      ☒ D. pelvic girdle becomes wider      E. None of these
79. Which of the following is a physical change in females during puberty?  
☒ A. Enlargement of breast      B. Ovulation begins      C. Menstruation begins  
D. All of the above      E. None of these
80. Being adventurous is a characteristic of  
☒ A. old age      B. adulthood      C. adolescent      D. childhood      E. None of these
81. Which of the following can help fight irresponsible adolescent behaviour?  
A. Church      B. Drug addicts      C. Peers      D. Single parenthood      E. None of these
82.  $1^\circ$  longitude equals 4 minutes. The Greenwich Meridian passes through Tema whilst longitude  $75^\circ$  W passes through New York City. What will be the time in Ghana when it is 12.00 noon in New York City?  
A. 7.00 am      B. 7.00pm      ☒ C. 5.00pm      D. 5.00am      E. None of these
83. Who defeated Governor Mitt Romney in the 2012 US Presidential Elections?  
A. Bill Clinton      B. John McCain      C. Al Gore      D. George Bush      ☒ E. None of these

84. Ghana's current Minister of Education is  
 A. Prof. K Opoku-Agyeman ☒ B. Prof. J. Nana Opoku-Agyeman  
 C. Hon. Hannah Tetteh D. Hon Lee Ocran E. None of these
85. Who is the new Minister for Youth and Sports?  
☒ A. Mr. Afriyie Ankrah B. Mr. Ebow Barton-Oduro C. Hon Mike Hamah  
 D. John Newman D. None of these
86. To which country was President John Evans Fiifi Atta Mills of blessed memory about to travel on the same day that he died?  
 A. Serbia B. Siberia C. Liberia ☒ D. Nigeria E. None of these
87. Which of the following is the exact date on which the late President Mills died?  
 A. May 4, 2012 B. June 14, 2012 ☒ C. July 24, 2012 D. August 4, 2012
88. The late President Mills was buried on Friday -----  
 A. June 15, 2012 B. July 13, 2012 ☒ C. August 10, 2012 D. September 14, 2012
89. The first Europeans to come to the Gold Coast landed at  
 A. Cape Coast ☒ B. Elmina C. Axim D. Accra E. None of these.
90. Power generated at Aboadze near Takoradi is known as -----  
 A. thermal energy B. hydro-electric power C. nuclear energy D. solar energy
91. Which of the following countries is not a member of Economic Community of West African States (ECOWAS)?  
 A. Guinea Bisau B. Mali C. Mauritania D. Cameroun E. None of these
92. Places which experience equal days and equal nights are located along the -----  
 A. Tropic of Capricorn B. Tropic of Cancer C. Arctic Circle D. Equator
93. Fish can be preserved in the following ways except by  
 A. smoking B. cooking C. drying D. salting E. freezing
94. The first general election in the history of Ghana was held in  
 A. 1949 B. 1951 C. 1955 D. 1957 E. 1960
95. Which of the following workers are involved in primary production?  
 A. Miners B. Goldsmiths C. Accountants D. Carpenters E. None of these
96. She is the first woman to become Chief Justice in Ghana.  
☒ A. Justice Bamford Addo B. Prof. Florence Abena Dolphyne  
☒ C. Justice Theodora Woode D. Prof. Jane Opoku-Agyemang E. None of these
97. One of the following women happens to be first female speaker of the Ghanaian Parliament.  
☒ A. Justice Bamford Addo B. Prof. Florence Abena Dolphyne (Mrs)  
☒ C. Justice Theodora Woode D. Prof. Jane Opoku-Agyemang E. None of these
98. How long did the Thirty year war last?  
 A. 3 years B. 13 years C. 3 months D. 13 months E. None of these
99. The earth revolves around the sun on its -----  
 A. pedestal B. base ☒ C. axis D. anchor E. None of these
100. Which of the following is not an ethnic group in Ghana.  
 A. Hausa B. Dagomba C. Ewe D. Nzema E. None of these

*GOOD LUCK AND GOD BLESS!*