

UNIVERSITY OF EDUCATION, WINNEBA
MATURE STUDENTS' ENTRANCE EXAMINATIONS, APRIL, 2016
GENERAL APTITUDE TEST.

CODE: GAT 111

TIME: 2 HOURS

INSTRUCTIONS: This examination covers ENGLISH LANGUAGE, MATHEMATICS, INTEGRATED SCIENCE, AND GENERAL KNOWLEDGE. Please answer ALL questions in each section by shading the correct answer on the shading sheet provided

SECTION A: ENGLISH LANGUAGE:

From the alternatives A-D, choose the one that most appropriately completes the sentence.

1. He was posted to the police.....to deal with administrative issues.
 - a. headquarters
 - b. headquarter
 - c. headquarters'
 - d. headquarter's
2. The.....on Peter's skin may be as a result of chicken pox.
 - a. rush
 - b. rushes
 - c. rash
 - d. rashes
3. There..... two alligators at the edge of the swamp this morning.
 - a. was
 - b. were
 - c. is
 - d. have been
4. News of events in foreign countries.....this country in minutes.
 - a. reaching
 - b. reach
 - c. reached
 - d. reaches
5. Ask them.....car was run over by the armour car.
 - a. whose
 - b. whom
 - c. who
 - d. whoever

6. Mrs. Abafum teaches in the Akropong School for the.....
- dead
 - deaf
 - death
 - deafs
7. This is a special program for.....
- marriage couples
 - married couple
 - married couples
 - marry couples
8. I went home.....my mother was not there.
- also
 - so
 - accordingly
 - but
9.the policeman left the cell, the inmates started smoking again.
- As soon as
 - No sooner had
 - Soon
 - Pretty soon
10. I agreed to his marriage proposal..... he was not very attractive.
- but
 - hence
 - although
 - when

From the alternatives lettered A-D, choose the one that is opposite in meaning to the underlined words.

11. The brash voices of the drunkards made it impossible to sleep.
- loud
 - muted
 - hasty
 - quite
12. His contribution consolidated their victory over the enemies.
- strengthened
 - blessed
 - weakened
 - awakened

13. The president felt refreshed by the time the convoy got to the apex of the mountain.
- excited
 - recharged
 - happy
 - Exhausted
14. Kevin was in a fantastic mood when he met the panellists.
- good
 - awful
 - unbelievable
 - bizarre
15. After gulping down mouthfuls of fresh air, we all felt giddy on our feet.
- frustrated
 - busted
 - steady
 - shaky

From the alternatives lettered A-D, choose the one that best explains the statement.

16. Last weekend's win was a feather in the cap of Accra Hearts of Oak. This means
- Accra Hearts of Oak has a feather in their cap
 - Accra Hearts of Oak won a big honour
 - Accra Hearts of Oak failed to score
 - Accra Hearts of Oak has a poultry farm.
17. Albert could not put up with his younger brother's uncouth behaviour. This means
- Albert could not house his brother
 - Albert travelled and left his brother
 - Albert could not tolerate his brother
 - Albert loves his brother
18. Victor is so naughty; he is fond of pulling people's legs. This means
- Victor is a tease
 - Victor is friendly
 - Victor is dangerous
 - Victor likes fighting
19. It is very dangerous to turn a deaf ear to the truth. This means it is dangerous
- to be deaf
 - not to listen to the truth
 - to keep quiet
 - to live among the deaf

20. When you hold your tongue, you save yourself a lot of troubles. This means
- a. When you put your hand in your mouth
 - b. When you hang your tongue out
 - c. When you keep quite
 - d. When you go to bed

From the alternatives lettered A-D, choose the one that is most nearest in meaning to the underlined words.

21. The journey through the mountains proved more hazardous than we anticipated.
- a. firm
 - b. safe
 - c. risky
 - d. waste
22. The tension between those two is too palpable to go unnoticed.
- a. nice
 - b. attractive
 - c. hidden
 - d. obvious
23. That Professor is an accomplished economist.
- a. a skilled
 - b. an uncommon
 - c. an infamous
 - d. a famous
24. When his appointment was terminated, Owusu's threats were not taken seriously.
- a. appoint
 - b. intimidations
 - c. redeployed
 - d. enterprising
25. Women must respect the decency of womanhood.
- a. flaunt
 - b. cherish
 - c. expensive
 - d. relish

SECTION B: MATHEMATICS

26. 46 candidates took physics and chemistry papers in examination. 6 of the candidates passed both papers and thrice the number of candidates who passed chemistry, passed physics. How many candidates passed physics?

- a. 13
- b. 7
- c. 33
- d. 39

27. Make y the subject in the relation $g = \frac{b}{y^3} - c$

- a. $y^3 = \frac{b}{g+c}$
- b. $y = \sqrt[3]{\frac{b}{g+c}}$
- c. $y = \sqrt[3]{\frac{c}{g+b}}$
- d. $y = \sqrt[3]{\frac{g}{c+b}}$

28. Where on the x - y plane does the line $5x + 3y = -1$ meet $2x + 5y = -8$.

- a. $\{-1, 2\}$
- b. $\{1, 2\}$
- c. $\{1, -2\}$
- d. $\{-1, -2\}$

29. Yaw, Kofi and Ama shared the profit they earned in a month from a joint business in the ratio 2: 4: 3 respectively. If Ama and Kofi together got a total of GH¢42.00. Find the profit earned in the month.

- a. GH¢50.40
- b. GH¢54.00
- c. GH¢62.00
- d. GH¢68.00

Use the data provided below to answer questions 30 and 31.

The ages of ten pregnant women in a maternity clinic are
26, 23, 24, 27, 26, 21, 22, 25, 23, 23

30. Find the mean age of the pregnant women.

- a. 34 years
- b. 14 years
- c. 23 years
- d. 24 years

31. Find the standard deviation of the data.

- a. 1.6 years
- b. 1.8 years
- c. 2.3 years
- d. 2.4 years

Use the information below to answer the questions 32 and 33.

A quantity m varies jointly as the square of n and the inverse of p . If $m = 12$ when $n = 2$ and $p = 3$.

32. Find the constant of variation.

- a. 3
- b. 6
- c. 9
- d. 12

33. Find the value of n when $p = 4$ and $m = 36$.

- a. 2
- b. 6
- c. 4
- d. 8

34. A regular polygon is such that each interior angle is 150° . How many sides has the polygon?

- a. 10
- b. 11
- c. 9
- d. 12

35. The diameter of a circle is 28cm . Find the angle to the nearest degree which an arc of length 16cm subtends at the center of the circle. (Take $\pi = \frac{22}{7}$).

- a. 65°
- b. 66°
- c. 130°
- d. 131°

36. A carefully cut cuboid has length, width and height as 4cm , 3cm , and 5cm respectively. What is the total surface area?

- a. 60cm^2
- b. 60cm^3
- c. 94cm^3
- d. 94cm^2

37. Find the equation of the line that passes through the points $(4, 5)$ and $(-3, 2)$.

- a. $y = 3x + 23$
- b. $3x - 7y = 23$
- c. $7y - 3x = -23$
- d. $7y = 3x + 23$

38. In a right-angled triangle ABC , $\angle ABC = 90^\circ$. If BC is 1m longer than AB and the hypotenuse AC is also 9m longer than AB , Find the length of hypotenuse AC .

- a. 29m
- b. 28m
- c. 27m
- d. 26m

39. Find the value of $1 - \frac{ab}{a-b}$ when $a = \frac{1}{2}$ and $b = -\frac{1}{3}$

- a. $-\frac{1}{5}$
- b. $1\frac{1}{5}$
- c. $-1\frac{-1}{5}$
- d. $\frac{1}{5}$

40. From a height of 15m Osei spots Asomah at an angle of depression of 30° . How far is Osei from Asomah?
- 7.5m
 - 18m
 - 22m
 - 30m
41. Two buses start off from a station K. The first bus ends its journey at station P (39km, 050°) from K. The final stop of the second bus is Q (25km, 320°) from K. Find the position of Q from P.
- (46km, 263°)
 - (46km, 033°)
 - (33km, 263°)
 - (33km, 046°)
42. A water container of height 8cm has a volume of 400cm^3 . What is the volume of a similar container 32cm high?
- 2560cm^3
 - 25600cm^3
 - 25000cm^3
 - 1600cm^3
43. The bearing of the point P from Q is 306° , find the bearing of Q from P.
- 036°
 - 054°
 - 126°
 - 180°
44. Express 3m and 24cm in kilometers, leaving the answer in standard form.
- $3.24 \times 10^{-4}\text{km}$
 - $3.24 \times 10^{-3}\text{km}$
 - $3.24 \times 10^{-2}\text{km}$
 - 3.24×10^{-1}
45. A square has an area of 50cm^2 . Find the perimeter of the square.
- $5\sqrt{2}$
 - $20\sqrt{2}$
 - $10\sqrt{2}$
 - $2\sqrt{5}$

46. The cost of rice and beans needed to fill a bowl of height 8cm is GH¢45. What is the cost of the rice and beans needed for a similar bowl of height 15cm?

- a. GH¢90
- b. GH¢2.97
- c. GH¢3.0035.
- d. GH¢84.4

47. Calculate the total sample space of tossing a dice once and tossing a coin once.

- a. 8
- b. 12
- c. 24
- d. 6

48. Given the points $A(4,1)$, $B(-2,3)$ and the vectors $AC = \begin{pmatrix} 2 \\ -1 \end{pmatrix}$ and $BD = \begin{pmatrix} 4 \\ 2 \end{pmatrix}$, find

CD .

- a. $\begin{pmatrix} -4 \\ 5 \end{pmatrix}$
- b. $\begin{pmatrix} 4 \\ -5 \end{pmatrix}$
- c. $\begin{pmatrix} 4 \\ 5 \end{pmatrix}$
- d. $\begin{pmatrix} 5 \\ -4 \end{pmatrix}$

49. A bag contains 20 balls, some of which are blue, the probability of choosing a blue ball is $\frac{1}{4}$. Find the number of blue balls.

- a. 16
- b. 15
- c. 10
- d. 5

50. If $3^{2x-1} = \frac{1}{27}$, find the value of x .

- a. -2
- b. -1
- c. 1
- d. 2

SECTION C: INTERGRATED SCIENCE

51. The resultant quantum of force per unit area is referred to as.....
- a) capacity
 - b) pressure
 - c) momentum
 - d) acceleration
52. The colour code for a neutral wire in an electrical plug is usually.....
- a) red
 - b) yellow
 - c) blue
 - d) green
53. The deliberate ending of a pregnancy is termed.....
- a) ectopic pregnancy
 - b) menstrual cycle
 - c) abortion
 - d) rhesus factor
54. Any substance that speeds up a chemical reaction is generally termed.....
- a) enzyme
 - b) catalyst
 - c) chemical accelerator
 - d) none of the above
55. In a science laboratory, if Yao wants to test for protein contents in a food substance, he will have to conduct a/an.....
- a) biuret test
 - b) emulsion test
 - c) cholesterol level test
 - d) glucose level test
56. The tooth that is sharp and pointed, and its used for tearing food in carnivores is called.....
- a) molars
 - b) premolars
 - c) incisors
 - d) canines

57. The inorganic components of soil include the following:

- I. Soil particles
- II. Air
- III. Humus
- IV. Mineral salts
- V. Water

- a) I, II, III, and IV only.
- b) II, III, IV and V only.
- c) I, II, IV and V only
- d) I, II, III, IV, and V

58. In the process of testing for starch in a leaf, a scientist dipped the leaf in alcohol.

A reason for doing this was to...

- a) remove all the starch in the leaf.
- b) soften the leaves.
- c) remove the green pigments in the leaf.
- d) kill all the living cells in the leaf.

59. The system in the body of an animal that comprises the heart, blood and blood vessels is referred to as.....

- a) the respiratory system
- b) the circulatory system
- c) the transport system
- d) the excretory system

60. Which of the following organs in the human body has a dual function among the following systems; circulatory, excretory and respiratory systems.....

- a) the lungs
- b) the liver
- c) the heart
- d) the kidney

61. In terms of feeding, organisms that are considered producers are referred to as.....

- a) autotrophs
- b) parasites
- c) saprophytes
- d) holozoic

62. The instrument used to measure the intensity of an earthquake is termed.....

- a) seismograph
- b) barometer
- c) seismometer
- d) manometer

63. A drug that cures diseases by killing or stopping the growth of bacteria in the body is called.....

- a) antigen
- b) antiseptic
- c) antibiotic
- d) vaccine.

64. A is a series of events that is continuous and eventually lead back to the starting point.

- a) sequence
- b) routine
- c) cycle
- d) process

65. The part of a plant that gives it anchorage is its.....

- a) roots
- b) trunk
- c) stem
- d) shoot

66. A man who weighs 100kg was able to pull a truck through a distance of 20m. If the force applied was 3500N, the work done by the man will be?

- a) 70 000J
- b) 700J
- c) 17500J
- d) 7000000J

All moving objects have Kinetic energy which is given by $\frac{1}{2} MV^2$. Use this information to answer question 67 and 68.

67. The "M" component in the equation above represents.....

- a) motion
- b) mass
- c) momentum
- d) mechanical energy

68. The S.I unit for measuring the "M" component of the equation above is.....

- a) Km/h
- b) Kg
- c) J
- d) M

69. In reproduction the characteristics of the parents are passed on to the Children through the process of.....
- a) mitosis
 - b) inheritance
 - c) chromosomes
 - d) heredity
70. A/an.....is substance that cannot be broken down into simpler particles substances.
- a) atom
 - b) element
 - c) compound
 - d) molecule
71. Sodium Chloride is a typical example of a/an
- a) atom
 - b) element
 - c) compound
 - d) molecule
72. The components a white light when dispersed with a triangular glass prism produces all the following colours;
- a) Red, yellow, violet, purple, indigo, green and Orange.
 - b) brown, indigo, red, orange, yellow, blue and green
 - c) Indigo, violet, green, blue, red, orange, and yellow
 - d) Green, red, pink, orange, blue, indigo and violet.
73. The normal human body temperature is scaled at?
- a) 34°C
 - b) 73°C
 - c) 57°C
 - d) 37°C
74. A substance that dissolves other substances to form a concentrated solution is referred to as.....
- a) a solute
 - b) a solvent
 - c) a mixture
 - d) a solution
75. Which of the following phenomena is affected by the moon?
- a) Earthquake
 - b) Sea breeze
 - c) Tides
 - d) Volcano

SECTION D: GENERAL PAPER

76. Which of the following leaders is regarded as the longest serving president on the African continent?
- A. Yoweri Museveni
 - B. Denis Sassou Nguesso
 - C. Robert Mugabe
 - D. John Magufuli
77. In the just ended elections at Uganda, the presidential candidate for the largest opposition party was given a house arrest in an attempt to prevent uproar among his supporters before the election results were declared. Who is leader of Uganda's largest opposition party?
- A. Mohamed Bilal
 - B. Kizza Besigye
 - C. Amama Mbabazi
 - D. Morgan Tsvangirai
78. All of the following are causes of land degradation, except...
- A. Discriminate cutting of trees
 - B. Mining activities
 - C. Improper disposal of waste
 - D. Over cultivation of land
79. The following are the types of environmental degradation in Ghana, except...
- A. Land degradation
 - B. Air pollution
 - C. Water pollution
 - D. Industrial pollution
80. A pollutant is a harmful substance which is released into the environment. Which of the following is not an example of a pollutant?
- A. Sulphur dioxide
 - B. Carbon dioxide
 - C. Polythene bags
 - D. Plastic bottles

81. Air pollution is the release of substance like gases, smoke and fumes which could be harmful to both animate and inanimate objectives. Which of the following is/are the cause(s) of air pollution in Ghana?

- I. Fumes from vehicles
- II. Waste from industries
- III. Excessive noise
- IV. Tsunami

- A. I and II only
- B. I, II and III only
- C. I, III and IV only
- D. All of the above

82. During the period of adolescence, boys and girls undergo many changes in their emotions and minds. Which of the following does not describe the emotional and mental characteristics of adolescents?

- A. Adventure
- B. Mood swing
- C. Schizophrenia
- D. Shyness

83. Which ethnic group in Ghana celebrates the *Bugum Chugu*, also known as the fire festival?

- A. Dagomba
- B. Gonja
- C. Nzema
- D. Navrongo

84. It is regarded as the oldest European building in existence in sub-Saharan Africa. It was built purposely to store goods and serve as fortress against attack from other Europeans and the local people along the coast. Which building is being referred to here?

- A. Christiansburg Castle
- B. Cape Coast Castle
- C. St George Castle
- D. Fort Good Hope

85. In an attempt to secure their activities, the British built several forts and castles along to coast. Which of the following forts or castles was not built by the British?

- A. Cape Coast Castle
- B. Elmina Castle
- C. James Fort
- D. Fort Williams

86. History has it that by the 1820s, the Ashantis had expanded their territory through wars under some powerful traditional rulers. Who are these powerful traditional rulers?

- I. Nana Oti Akenten
- II. Nana Osei Tutu
- III. Nana Opoku Ware
- IV. Nana Okomfo Anokye

- A. II and III only
- B. II and IV only
- C. I, II and III only
- D. II, III and IV only

87. Which European country colonized the following countries Equitorial Guinea and Cape Verde?

- A. Great Britain
- B. France
- C. Portugal
- D. Denmark

88. Which European country colonized the following West African countries The Gambia and Nigeria?

- A. Great Britain
- B. France
- C. Portugal
- D. Sweden

89. All of the following are activities that brought foreigners or Europeans into West Africa during the slave trade era, except...

- A. Missionary work
- B. Exploitation of natural resources
- C. Demand from traditional rulers
- D. Desire to discover more countries

90. Who is the current Inspector General of Police in Ghana?

- A. John Kumador
- B. John Kudalor
- C. Mohammed Alhassan
- D. Felix Sarpong

91. What festival is celebrated by the Effutu (Winneba) people in the Central Region of Ghana?
- A. Aboakyer
 - B. Bakatue
 - C. Fetu
 - D. Ohum
92. The four most important minerals in Ghana are:
- A. Diamonds, gold, manganese, iron ore
 - B. Gold, diamonds, manganese, bauxite
 - C. Gold, diamonds, bauxite, salt
 - D. Gold, manganese, bauxite, salt
93. The instrument used to measure air pressure is referred to as...
- A. Anemometer
 - B. Barometer
 - C. Thermometer
 - D. Wine vane
94. The instrument used to measure the speed of wind is known as...
- A. Anemometer
 - B. Barometer
 - C. Thermometer
 - D. Wine vane
95. The youngest country in Africa to have gained independence is South Sudan. In which month and year did South Sudan gain her independence?
- A. June 2011
 - B. July 2011
 - C. June 2012
 - D. July 2012
96. How many continental African countries are landlocked and have not access to the ocean or seas?
- A. 16
 - B. 18
 - C. 22
 - D. 24
97. Which of the following African country is not a landlocked country?
- A. Burundi
 - B. Ethiopia
 - C. Kenya
 - D. Niger

98. Modern technology is extremely needed in which of the following areas:

- A. Agriculture, sport, education and tourism
- B. Agriculture, industry, tourism and mining
- C. Agriculture, education, industry and health
- D. Health, transport and communication, tourism and fishing.

99. Which organ of government does the President of the Republic of Ghana represents?

- A. Parliament
- B. Executive
- C. Legislature
- D. Judiciary

100. The 1992 Constitution of Ghana came into full effect on which month and year?

- A. March 1992
- B. April 1992
- C. January 1993
- D. March 1993

