

NNAMDI AZIKIWE UNIVERSITY POST UTME PAST QUESTIONS COMILED BY GRACE GROUP, UNIZIK IN PARTNERSHIP WITH BARIGRACE SERVICES AND [www.fiisms.com](http://www.fiisms.com)

# **NNAMDI AZIKIWE UNIVERSITY (UNIZIK)**



## **POST UTME PAST QUESTIONS (2006 TO DATE)**



# **GRACE GROUP, UNIZIK**

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**NNAMDI AZIKIWE UNIVERSITY, AWKA  
POST-UME SCREENING EXERCISE,  
2006/2007 FOR  
MEDICINE, NATURAL SCIENCE, HEALTH  
SCIENCES AND TECHNOLOGY,  
BASIC MEDICAL SCIENCES AND  
PHARMACEUTICAL SCIENCES**

shade only One answers using HB pencil only

**INSTRUCTIONS Please note that code for the Department of statistics is 554 And Not 254.**

**Choose the option that best conveys the meaning of the underlined portion in each of the following sentences:**

1. In the match against the rangers team, the Enyimba boys turned out to be the dark horse.  
A. Played Most Brilliantly B. Played Below Their Usual Form C. Won Unexpectedly D. Lost As Expected E. Won As Expected
2. He spoke with his heart in his mouth.  
A. Courageously b. With such unusual cowardice  
c. With a lot of confusion in his speech  
D. Without being able to make up his mind E. With fright and agitation.
3. The leader in today's issue of punch newspaper focus on inflation.  
A. President b. Headline c. Editorial  
d. Columnist e. Proprietor
4. All his plans fell through.  
A. Failed B. Were Accomplished C. Had To Be Renewed D. Were Rejected E. Fell
5. He stared at her (a). Glanced b. Peeped  
c. Looked d. Gazed e. Fixed
6. As he was a gullible leader, his followers took advantage of him. A. He was weak and unable to enforce his authority B. He Was Partial And Unfair In Dispensing Justice C. He Was Simple Minded To A Fault D. He Was Slow To Act E. he was lacking in education and experience in everyday affairs.
7. His summary of the lecture was brief and to the point A. Careful B. Precise C. Accurate  
D. Exact E. Crucial.
8. Do you have the same aversion as I do for home videos? A. Bitterness b. Dislike  
c. Criticism d. Indignation e. Preference.
9. I did not think she could be so easily taken in by his pretences.  
A. Flattered B. Deceived C. Pregnated  
D. Overcome E. Blackmailed
10. The witness was guilty of swearing to a statement he knew to be false.  
A. Forgery b. Perjury c. Libel d. Slander  
e. Affidavit.
11. Most of his observations were wide of the mark A. Comprehensive b. Irrelevant  
c. Pertinent d. Came rather late e. Unacceptable.
12. The clerk refused to answer for the mistakes made by the manager and his assistants. A. To reply to b. To give an answer c. To explain d. To accept responsibility e. To account
13. Good citizens should take the part of a good government when it is being attacked by the foreign press. A. Speak In Support Of  
B. Explain The Part Played By  
C. Act Like A Representative Of  
D. Emphasize The Progress Made By  
E. Outline The Virtues Of.
14. The principal of my school has a variety of peculiarities. The most conspicuous is the way he gesticulates when making a serious point. A. Shows anxiety when making a serious point b. Break down when talking seriously  
c. Uses his hand and arms as a sign  
d. Bows his head in humility e. Shakes his head from one side to the other.
15. He heard the loud noise of the huge air-raided siren. A. buzz b. crack c. tumble d. whistle  
e. Wail.
16. One of the stages of the creative process is the incubation period. This refers to the period when  
A. The idea is firmly fixed through repetition  
B. The person suddenly comes upon the idea  
C. The person thinks over the idea.  
D. The idea yields concrete result  
E. The idea is given up.
17. When a man is immune to an illness, he is  
A. opposed to it b. attached to it c. hated by it  
d. protected against it e. addicted to it.
18. The two boxers were neck and neck up till the sixth round but in the seventh and final round, the bigger one lost ground.  
A. Could no longer stand on his feet b. Failed to maintain his position c. Was beaten d. Became dizzy e. Became a punching bag.
19. He uses his savings to bring up his nephew  
A. Lead b. Accompany c. Feed d. Support e. Conduct.
20. Whenever I travel abroad, I always bring, on my return, to photographs, postcards and other small terms as souvenirs. (A) mementoes

(B) remembrance (C) memorials (D) memorables

(E) property

**Instructions**

**Complete each of the following sentences by choosing the option that most suitably fills the space**

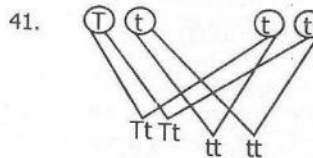
21. When the beggar was tired he \_\_\_\_\_ down by the roadside  
A. Lied b. Laid c. Layed d. Lay e. Lain
22. He did not like \_\_\_\_\_ leaving the class early.  
A. We b. Us c. Our d. Ourselves e. Our selves
23. Before the operation the dentist found that his patient's teeth \_\_\_\_\_ a. Have long decayed b. Have been decayed c. Have long being decayed d. Had long decayed e. Had been decayed.
24. The employer, not the salesman and his representative \_\_\_\_\_ responsible for the loss of revenue.  
A. Are b. Are being c. Are never d. Have been e. is
25. The boy was born before his parents actually got married and so the court has declared him \_\_\_\_\_  
A. Illegal b. Illegitimate c. Illicit d. Unlawful e. Untenable
26. As he was still owing me two naira, i was careful not to \_\_\_\_\_ him any more money.  
A. Credit b. Loan c. Borrow d. Extend e. Lend
27. Last week the \_\_\_\_\_ at the theater was the largest I had ever seen.  
A. Assembly b. Congregation c. Convention d. Audience e. Crowd.
28. The green snake which lives in the green grass is using a perfect \_\_\_\_\_ a. Ambush b. Under cover c. Camouflage d. Shelter e. Subterfuge.
29. In order to carry out the necessary post mortem examination, the dead body was \_\_\_\_\_ a. extracted b. extradited c. exiled d. exhumed e. expelled
30. Remember this matter is strictly \_\_\_\_\_  
A. Between you and I b. Among you and I c. Among you and me d. Between you and me e. Between you and myself.
31. Equilibrium is said to be attained in a reversible reaction when :  
A. All the reactants have been used up  
B. All the products have been formed  
C. There is no further change in temperature  
D. The rates of the forward and backward reactions are equal E. The rates of formation of the products decreases with time.
32. Bubbling of carbon(iv) oxide into calcium hydroxide solution results in the formation of A. CaO B. Ca(OH)<sub>2</sub> C. CaCO<sub>3</sub> D. Ca (HCO<sub>3</sub>)<sub>2</sub> E. H<sub>2</sub>CO<sub>3</sub>
33. If 3 mole of electrons are required to deposit 1 mole of a metal M during The electrolysis of its molten chloride, the empirical formula of the metallic chloride is:  
A. M<sub>3</sub>Cl B. M<sub>2</sub>Cl<sub>3</sub> C. MCl D. M<sub>2</sub>Cl<sub>2</sub> E. MCl<sub>3</sub>
34. Which of the following compounds crystallizes without water of crystallization?  
A. Na<sub>2</sub>CO<sub>3</sub> b. CuSO<sub>4</sub> c. MgSO<sub>4</sub> d. NaCl E. FeSO<sub>4</sub>.
35. When starch undergoes complete enzyme-catalyzed hydrolysis, the resulting product is  
A. Glucose b. Maltose c. Sucrose d. Fructose d. Cellulose
36. When steam is passed over white-hot coke the products are  
A. Carbon(IV)oxide and nitrogen B. Carbon(IV) oxide and hydrogen C. Carbon (II) oxide and nitrogen D. Carbon(IV) oxide and hydrogen E. Carbon (IV) oxide and steam.
37. Which of the following compounds will not decompose when heated strongly? A. NaHCO<sub>3</sub> B. K<sub>2</sub>CO<sub>3</sub> C. MgCO<sub>3</sub> D. Ca (HCO<sub>3</sub>)<sub>2</sub> E. ZnCO<sub>3</sub>
38. The rate of a reaction is proportional to the number of effective collisions occurring per second between the particles. this statement is associated A. Kinetic theory B. Molecular theory C. Atomic theory D. Collision theory E. Gas laws.
39. How many faradays of electricity are required to liberate 9g of aluminum? ( Al = 27):  
A. 0.1 b. 0.3 c. 1.0 d. 2.7 e. 3.0
40. Which of the following metals will be the most suitable for use where lightness and resistance to corrosion are of importance?  
A. lead b. copper c. iron d. Calcium e. Aluminium
41. If you cross-breed a tall variety (Tt) of maize with a short Varity (tt) the ratio of tall to short plants in the offspring will be  
A. 2:1 b. 1:2 c. 1:1 d. 1:3 e. 3:1
42. Euglena may be classified as a plant because it  
A. Has chloroplast b. Has a gullet c. Lives in a pond d. Possesses a flagellum e. Has a pellicle
43. When proteins are broken down they also provide  
A. Oxygen b. Carbohydrates c. Energy d. Amino acids e. carbon dioxide.
44. Which of these products obtained from analyzing sweat from the skin is not an excretory product?  
A. Water b. Salts c. Dust d. Urea e. Urates
45. The centre which controls respiratory activities in the mammalian brain is the a. Cerebrum b. Olfactory lobes c. Pituitary organ d. Cerebellum e. Medulla oblongata

46. The removal of a man's pancreas by surgical operation can affect only the digestion of  
 A. Starch b. starch, proteins and fats c. oils and fats d. proteins e. carbohydrates and fats
47. Which of the following does a virus have in common with animal cells?  
 A. Nucleus B. DNA C. Glycogen D. Cytoplasm
48. The sex of foetus is determined during(A) meiosis (B) copulation(C)fertilization (D)placentation
49. The organ located within the duodenal loop in the mammal is the  
 A. spleen B. pancreas C. liver D. gall bladder.
50. Where is energy produced in a cell?  
 A. Nucleus b. Nucleolus C. Lysosomes D. Chloroplast e. Mitochondria.

SOLUTION 2006/2007  
 SOLUTION TO 2006/2007  
 NAU POST-UME SCREENING QUESTIONS FOR  
 MEDICINE, NATURAL SCIENCES, HEALTH SCIENCES

1. C - won unexpectedly
2. E - with fright and agitation
3. C - editorial
4. A - failed
5. D - gazed
6. A - He was weak and unable to enforce his authority
7. D - exact
8. B - dislike
9. B - deceived
10. B - perjury
11. B - irrelevant
12. D - to accept responsibility
13. A - speak in support of
14. C - uses his hand and arms as a sign
15. D - whistle
16. C - the person thinks over the idea
17. D - protected against it
18. B - failed to maintain his position
19. D - support
20. A - mementoes
21. D - lay
22. C - our
23. D - had long decayed
24. E - is
25. B - illegitimate
26. E - lend
27. D - audience
28. C - camouflage
29. D - exhumed
30. D - between you and me
31. D
32.  $C-Ca(OH)_2 + CO_2 \rightarrow CaCO_3 + H_2O$
33. E
34. D
35. A
36. D-The product is water gas (a mixture of CO & H<sub>2</sub>)
37. B
38. D
39. Aluminum is liberated as  $Al^{3+} + 3e \rightarrow Al$   
 27g of AL requires 3 Faraday  
 9g -----?  
 $= 9 \times 3/27 = 1F$  **ANS= C.**

40. E



Tt - tall, tt - short.  
 Ratio of tall to short plant is 2:2 or 1:1 **Ans. C**

42. Euglena may be classified as a plant because it has chloroplast used for photosynthesis. **Ans. A**

42. Digestion is the break down of food substances to provide energy. Hence, when proteins are broken down, they also provide energy. **Ans. C**
43. Dust is not an excretory products because it is not a product of metabolism. **Ans. C**
44. Medulla oblongata controls respiration, heartbeat, digestive movement, supply of blood to different parts of the body and other involuntary actions. **Ans. E**
45. Pancreatic juice secretes Amylase, Trypsin and Lipase for digestion of starch, protein and fats respectively. **Ans. B**
46. The head of viruses contain DNA, which is also found in animal cells. **Ans. B**
47. When the ovum is fertilized by a sperm carrying X-chromosome, a female child will form. But, with y-chromosome, a male child will form. **Ans. C**
48. The head of the pancreas lies within the arc formed by the C-shaped duodenum **Ans. B**
49. In the mitochondria, food substances are oxidized to release energy for the activities of the cell. **Ans E**

NNAMDI AZIKIWE UNIVERSITY, AWKA  
POST - UME SCREENING EXERCISE 2007/ 2008  
FOR AGRICULTURE, HEALTH SCIENCE AND  
TECHNOLOGY, MEDICINE, NATURAL, SCIENCE AND  
PHARMACEUTICAL SCIENCE.

**Time Allowed:** 1 Hour

Shade (firmly) Only One Answer Using Hb Pencil Only

Please Shade The Following Corrected Subject Codes

1. Pharmaceutical Science: 654 And Not 704

2. Statistics 554 And Not 254

3. Agriculture : 714.

Read The Passage Carefully And Answer The Questions That Follow It.

So far, I have been speaking of science in its universality, viewed from the perspective of the world at large. For in the context of our own country and our sister developing countries, many of the factors mentioned earlier are not very important. For example, pollution, deterioration of the environment and pollution explosion are not yet serious problem for us in this country.

Let me now turn to a more specific area, namely, the question of scientific choice for developing countries. There is no doubt that the role which science and technology have played in the upliftment of the material and economic well-being of the developed nations will, and does, influence the criteria that the third nations must choose in order to establish their science policies and priorities.

But the criteria to be used by these nations do not have to be the same as those which have brought the developed countries to their present stage of evolution. For while human beings have the same problems, their solutions, to be meaningful will have to be sought within some relevant frame of reference, such as the available resources and expertise, social values, place and time in the historical scale.

1. "Frame of reference" in this passage means  
A. Point of information b. Range of authority  
C. Economic pattern d. Context of situation.
2. The writer apparently believes that through science and technology our country can achieve  
A. Peace and order  
B. Progress and material success  
C. Social values and universality  
D. Wealth and economic progress.
3. According to the passage, the basic consideration for developing science and technology should be three of the following:  
1. Technical know-how  
2. Availability of raw materials  
3. Atmospheric pollution  
4. The people's tradition and beliefs  
5. Population 6. Capital.  
A. 2,1, and 6 only b. 3,2 and 4 only  
c. 5,3 and 6 only d. 5,2 and 6 only.
4. The main idea of this passage is that  
A. There is a yawning gap between the haves and have-nots  
B. There could be atmospheric pollution and population explosion.  
C. The concerns of science and technology

- are the same in all countries  
d. Each nation must plan its development according to its needs and resources.
5. The term "our sister developing countries" implies  
A. Britain, Gambia and Canada B. Ghana, Germany and Togo C. China, India and holland.  
D. Liberia, sierra-leone and Gabon
- Choose the expression or word which best completes each sentence**
6. \_\_\_\_\_ for the team for six years, he decided to join another. A. When he play b. Playing  
c. Having played d. When he was playing.
7. The bridge connecting the two cities was \_\_\_\_\_ by the enemy a. Blown up b. Blown down  
c. Blown over d. Blown away.
8. My little boy is suffering \_\_\_\_\_ jaundice a. From b. Of c. For d. With
9. They went to the market and bought a suitcase and \_\_\_\_\_ bag.  
A. A big leather brown b. A leather brown big c. A big brown leather  
d. A brown big leather.
10. By the end of this year \_\_\_\_\_ in this town for eleven years.  
A. I'm living b. I'd be living c. I'll have lived  
d. I have lived
11. If he had left home earlier, he \_\_\_\_\_ late  
A. Would not be b. Would not been  
c. Would have been not d. Would not have been.
12. I saw you walking in that direction but I did not know exactly \_\_\_\_\_ a. Where are you going b. Where you were going c. To where you were going  
D. Where you are going.
13. The hill behind the town was so steep \_\_\_\_\_  
A. That no man could find a foot-hold on  
B. For no man to find a foot-hold on  
C. For any man to find a foot-hold on  
D. That no man could find a foot-hold on it.
14. Walking down the street \_\_\_\_\_  
A. The boy was knocked down by a car  
b. A car knocked the boy down c. The boy was knocked down by car D. A car collided with the boy.
15. The project which seemed very near realization \_\_\_\_\_ because of lack of funds A. Fell over  
b. Fell through c. Fell in d. Fell off
16. The chairman of the company was very sympathetic \_\_\_\_\_ his staff. A. To b. At c. For d. On
17. Jane asked John \_\_\_\_\_ A. Whether could she meet him later b. Could she meet him latter  
c. If she could meet him later  
D. She could meet him later.
18. She doesn't have to attend the lecture \_\_\_\_\_ A. Doesn't she? B. Is she? C. Has she?  
D. Does she?
19. After our series of quarrels, it would be \_\_\_\_\_ to pretend that I have any more regard for him A. Hypothetical b. Essential  
c. Hypocritical d. Inevitable
20. If the company had any delay at the customs office, it was \_\_\_\_\_ their own making a. At  
b. Of c. From d. Through.
21. The members of the panel were \_\_\_\_\_  
A. Discussing about it b. Discussing on it  
c. Discussing it d. Discussing around it.
- Choose the word/expression which best completes each sentence.**
22. The giant hydro-electric project is among the \_\_\_\_\_ of colonial rule in southern Africa  
a. Inheritance b. Remnants  
c. Legacies d. Evidence.
23. During the inaugural address, the president \_\_\_\_\_ the activities of his government for the past eight years. A. Reiterated b. Reviewed C. Restated  
D. Recited
24. The World Bank team which visited the landlocked country \_\_\_\_\_ a bleak economic future for it.  
A. Forecast B. Discovered C. Thought of  
D. Prophesied.
25. We traveled all night and arrived \_\_\_\_\_ the Lagos motor park at six o'clock in the morning a. By b. Inside c. In d. At
26. We ought to stay away from this place \_\_\_\_\_ the robbers come back. A. Provided  
b. Should in case c. In case D. Since
27. The principal will be going away on \_\_\_\_\_ . In his absence, the vice principal will \_\_\_\_\_ the school. A. Holidays/take over  
B. Holiday/carry out C. Holidays/care for  
D. Holiday/look after.
28. The new leader has good intentions, but he is unable to \_\_\_\_\_ A. Carry them with him  
b. Carry them out c. Carry them on d. Carry them well.
29. Enugu is not far from here, it is only an \_\_\_\_\_ a. Hour of driving b. Hour's drive  
c. Hour by driving d. Hours drive
30. Do you know if the new lecturer \_\_\_\_\_ yet?  
A. is arrived b. Will be arriving c. Has arrived

- d. Had arrived.
31. Had he known he \_\_\_\_\_ away A. Will go b. Will be going c. Would have gone D. Will have gone
32. It is time we \_\_\_\_\_ a. Should be going b. Ought to go c. Go d. Went
33. He sent the children out to play \_\_\_\_\_ he might be alone A. Because b. So that c. Since D. While
34. The frictional force between two bodies  
A. Exist only when there is relative motion or tendency for motion  
B. Acts so as to oppose the motion  
C. Depends on the normal reaction between the two surfaces D. Has all of these characteristics.
35. An ice cube floats in a glass of water filled to the brim. What happens when the ice melts  
A. The water level remains the same  
B. The water in the glass overflows  
C. There is a drop in the level of water in the glass due to condensation on its outside  
D. The levels of water drops because melted ice occupies less volume
36. The internationally agreed system of units (SI) for physical measurements are:  
A. lb, ft, sec B. g, m, sec C. Kg, m, sec D. Kg, cm, sec.
37. To determine the weight of an object, you could: a. Use a beam balance b. Use a spring balance c. Find the force necessary to give it a certain acceleration d. Use none of these methods.
38. The density of a solid is defined as the  
A. Mass of the solid compared to the mass of an equal volume of water.  
B. Amount of water displaced when a unit mass of the solid is immersed in it.  
C. Volume per unit mass of the solid  
D. Mass per unit volume of the solid.
39. A few grains of table salt were put in a cup of cold water kept at a constant temperature and left undisturbed. Eventually, all the water tasted salty, this action is due to:  
A. Convection b. Osmosis c. Capillarity d. Diffusion.
40. The heat from the sun reaches the earth by the process of:  
A. Insulation b. Conduction c. Convection d. Radiation.
41. Two lamps rated 40w and 220v each are connected in series. The total power dissipated in both lamps is:  
A. 10w B. 20w C. 40w D. 80w
42. The amount of heat required to raise the temperature of a body is:  
A. Thermal energy b. Thermal conduction  
C. Specific heat capacity  
d. Thermal capacity
43. If PHCN charges N5 per KWH, what is the cost of operating for 24 hours a lamp requiring 1A on a 200v line?  
A. N 24 B. N32 C. N 55 D. N 40
44. The electric supply from the national grid at Kainji dam is transmitted at high voltages of the order of hundreds of kilovolts but it is converted to domestic use of about 200 to 220 volts by:  
A. Commutators b. Transistors c. Valves  
d. Transformers
45. Two boys are communicating with each other by stretching a string passing through a hole punched in the bottom each of two tin cans. The physical principle employed is that sound travels.  
A. Mainly through air  
B. Faster through gases than in solids and liquids. C. With greater ease through a string than in air. D. None of the above is correct
46. The temperature at which the water vapour present in the air saturates the air and begins to condense is known as:  
A. Boiling Point B. Melting Point  
C. Critical Temperature D. Dew Point.
47. An object is positioned between two plane mirrors inclined at right angles to each other. The object is 1 unit distance from each mirror. The number of images formed is: A. 1 B. 2 C. 3 D. 4.
48. If the volume of a given mass of gas at constant pressure is proportional to the absolute temperature, the gas is said to obey: A. Hooke's law b. Boyle's law  
c. Dalton's law d. Charles's law.
49. Which of the following does not cause a reduction of the surface tension of water.  
(A) Detergent (B) Alcohol (C) Camphor (D) Grease
50. A generator is connected to fifteen 40w lamps and a musician's 600w amplifier. How much energy is used if the generator runs for 6 hours? A. 8.40kwh b. 7.20kwh  
c. 12.00kwh d. 6.00kwh.
51. Which of the following elements is the best absorber of X-rays? A. Hydrogen b. Oxygen  
c. Copper d. Lead
52. When heat is applied to one end of a metal rod, the molecules at the other end soon begin to vibrate with greater amplitude than before because heat has been transferred by: A. Radiation  
b. Convection c. Conduction d. Insulation

53. The plane mirrors in a kaleidoscope are usually placed: A. at an angle  $60^\circ$  B. parallel to one another C. perpendicular to one another D. at an angle of  $45^\circ$ .
54. Which of the following statements explains why tetraoxosulphate (VI) acid is regarded as a strong acid? A. The acid is concentrated B. The acid is highly corrosive C. The acid is completely ionized D. Tetraoxosulphate (VI) ions are very reactive.
55. Which of the following is not correct of glucose and fructose? A. They are structural isomers B. They reduce fehling's solution C. They can be obtained by the hydrolysis of starch D. They are readily fermented by enzymes.
56. Which of the following is normally used for drying ammonia gas? A. Concentrated tetraoxosulphate (iv) acid B. Calcium oxide C. Anhydrous calcium chloride D. Phosphorus(v) oxide.
57. Nuclear reactions can be used in the following except A. Gauging the thickness of objects B. Making atomic bombs C. Generating electricity D. Purifying water
58. The following metals are extracted by the electrolytic method except A. Potassium b. Tin c. Calcium d. Magnesium
59. PMS (petrol) can be Obtained from AGO (diesel) by A. Distillation b. Cracking c. Catalysis d. Polymerization.
60. The separation of a mixture of calcium trioxocarbonate (iv) and sodium trioxocarbonate (iv) is most easily carried out by using the differences in their: A. Physical States B. Melting Points C. Solubility D. Boiling Points.
61. What is the amount (in mole) of sodium trioxocarbonate (iv) in 5.3g of the compound? (Na=23; C= 12; O = 16)  
A. 0.05 B. 0.10 C. 0.50 D. 0.20
62. Brass is an alloy of A. Copper and iron b. Copper and chromium c. Copper and zinc d. Copper and magnesium.
63. The products of the electrolysis of dilute sodium chloride solution with platinum electrodes are: A. Hydrogen and oxygen b. Oxygen and chlorine c. Oxygen and water d. Chlorine and water
64. When starch undergoes complete enzyme catalyzed hydrolysis, the resulting product is A. Glucose b. Maltose c. Sucrose d. Fructose
65. Which of the following is not a direct petroleum product?  
A. Ethanol b. Methane c. Vaseline D. Kerosene
66. Which of the following properties is characteristic of electrovalent compounds?  
A. Formation of crystalline solids  
B. Solubility in polar solvents.  
C. High vapour pressures  
D. High melting and boiling points.
67. Compounds that have the same molecular formula but different structures are said to be  
A. Allotropic b. Polymeric c. Isomeric  
d. Isotopic
68. Water from a river contaminated by sodium hydroxide waste will have PH of about  
A. 1 b. 3 c. 7 d. 9
69. Which of the following is suitable for determining different isotopes present in an element which exhibits isotopy?
70. When iron rusts, it undergoes  
A. Deliquescence b. Chemical decomposition  
C. Hydrolysis d. Redox reaction.
71. When sucrose is warmed with fehling's solution  
A. The solution turns milky  
B. A brick-red precipitate is formed  
C. There is no precipitate  
D. A blue-black colouration is produced.
72. Which of the following minerals contain fluorine as one of its constituent elements?  
A. Cryolite b. Bauxite c. Kaolin d. Mica
73. Which of the following pieces of apparatus can be used for drawing a current of air through a liquid?  
A. Wash bottle b. Aspirator c. Pipette  
d. Capillary tube.
74. The green house effect is a climatic condition associated with the presence of excess.  
A. Carbon (IV) oxide b. Hydrogen sulphide  
C. ammonia gas d. Nitrogen (II) oxide.
75. Electrovalent compounds are characterized by  
A. Solubility in ethanol b. High molar mass  
C. High melting point. D. Strong oxidizing ability
76. A germinating seed requires oxygen which is essential for:  
A. Converting carbohydrates into glucose  
B. Transporting energy from one part of the plant to another.  
C. The production of energy by oxidizing essential carbohydrates  
D. Hydrolysis of proteins.
77. A carbohydrate molecule in the right Ventricle of the heart is pumped into the cell of the toe of man. Which of these structures is it unlikely to pass through en route?  
A. Pulmonary artery b. Lungs c. Heart d. Liver



78. Which of these elements is required by plants in small quantities only?  
A. Boron b. Potassium c. Magnesium  
d. Nitrogen
79. The mammalian stomach can carry out a number of processes except  
A. Absorption Of Glucose  
B. Secretion Of Hydrochloric Acid  
C. Production Of Trypsin  
D. Churning Of Food
80. A farmer working in a swamp rice farm did not eat any food nor drink any water. Which of these diseases can he not contract?  
A. Cholera b. Bilharzia c. Malaria  
d. River blindness.
81. A secchi disc is used in the determination of:  
A. rainfall b. Tidal wave c. Turbidity  
D. Current velocity.
82. Which of these is not an enzyme?  
A. Pepsin b. Gastrin c. Amylase d. Trypsin
83. The plumule is best described as:  
A. Part of the cotyledon  
b. Part of the endosperm  
c. A miniature shoot  
D. Structure opposite the hilum
84. A gland in the human body secretes two hormones, one of which causes a disease called diabetes when there is a deficiency. Which of these organs produces the hormone?  
A. Spleen b. Adrenal body  
c. Pancreas d. Thyroid and parathyroid.
85. A sugar solution was boiled with fehling's solutions A and B and the colour remained blue. The sugar tested was:  
a. Glucose b. Maltose c. Fructose  
d. Sucrose
86. Root hairs have their origin from  
A. Endodermis b. Cortex c. Xylem  
d. Epidermis
87. The one-seeded fruit in which the pericarp and seed coat have become fused together is known as  
A. Achene b. Samara c. Caryopsis  
d. Drupe.
88. Milk can be pasteurized by:  
A. The addition of sodium chloride  
B. Boiling for one hour  
C. Heating to 75°C for 20 minutes  
D. Heating to 75°C for one hour
89. Human beings require vitamins in their diet because vitamins.  
A. Contain carbohydrate and fats  
B. Stimulate the alimentary canal  
C. Digest proteins in the body  
D. Influence many important chemical processes in the body.
90. The organ through which food and oxygen are supplied to the human embryo and which also prevents harmful materials from reaching the embryo is the  
A. Amnion B. Uterus C. Placenta  
D. Umbilical Cord
91. Which of the following food substances is digested in the stomach?  
A. Carbohydrates B. Fats And Oils  
C. Fats And Proteins  
D. Carbohydrates And Fats
92. The conversion of excess amino acids into urea occurs in the  
A. Kidney b. Pancreas c. Spleen d. Liver
93. Where is the food stored in a yam plant?  
A. Stem B. Bud C. Adventitious Root  
D. Tap Root
94. Growing yam tendrils climb for support. This growth response is  
A. Haptotropism B. Geotropism  
C. Hydrotropism D. Chemotropism.
95. The functional unit of a mammalian kidney is the  
A. Malpighian Capsule B. Glomerulus  
C. Ureter D. Nephron
96. The glottis is the opening which leads to the  
A. Oesophagus B. Larynx C. Mouth  
D. Pharynx
97. If the gall bladder of a man is removed by surgery, which of the following processes will be most seriously affected?  
A. Digestion Of Fats And Oils B. Digestion Of Starch  
C. Conversion Of Proteins  
D. Formation Of Urea.
98. For pollen to be released in *crotonaria juncea* the insect must depress the :  
A. Wing b. Keel c. Standard  
d. Antesealous stamen.
99. In an agricultural ecosystem, the biotic component consists of  
A. Crops, pests and beneficial insects  
B. Crops, temperature and humidity  
C. Pests, beneficial insects and water.  
D. Crops, water and soil
100. Which of the following is an example of discontinuous variation?  
A. Skin coloration b. Left-handedness  
C. Body weight d. Height

**SOLUTION TO 2007/2008  
NAU POST-UME SCREENING QUESTIONS FOR  
MEDICINE, NATURAL SCIENCES, HEALTH  
SCIENCES CO**

1. D - context of situation
2. D - wealth and economic progress
3. A - 2,1 and 6 only
4. D - Each nation must plan its development according to its needs and resources.
5. D - Liberia, Sierra - Leone and Gabon
6. C - Having played
7. A - Blown up
8. A - from
9. C - A big brown leather  
Note: modifiers appear before size, shape, age, colour, verb and the noun being described.
10. C - I' ll have lived
11. D - would not have
12. B - where you were going
13. "So" collocates with "to" **Ans. D.**
14. A - the boy was knocked down by a car
15. B - fell through (failed)
16. A - to
17. C - if she could meet him later
18. D - Does she?
19. C - hypocritical
20. B - of
21. C - discussing it. Note that "discussing about" is tautological.
22. D - evidence
23. A - reiterated
24. A - forecast
25. C - at
26. C - in case
27. D - holiday/ look after
28. C - carry them on
29. B - hour's drive
30. C - has arrived
31. C - would have gone
32. D - went
33. B - so that
34. D
35. D -ice contracts on melting to water
36. C
37. B
38. D
39. D
40. Radiation does not require a material medium.  
**Ans. D**
41. D
42. The amount of heat required to raise the temperature of a body is heat or thermal capacity. But if the body involved has a mass of 1kg, it is specific heat capacity. **Ans. D**
43. Power,  $P = IV$   
 $= 1 \times 200 = 200w$   
Total cost =  $PCT/1000$   
 $= 200 \times 5 \times 24/1000$   
 $= N24$  **Ans. A**
44. D
45. C
46. D
47. No of images,  $N=360/\theta - 1$   
 $= 360/90 - 1$   
 $= 4 - 1$   
 $= 3$  **Ans. C**
48. D
49. D
50. Total power,  $p = (15 \times 40) + 600$   
 $= 1200 w$   
energy =  $pt$   
 $= 1200 \times 6$   
 $= 7200 wh$  or 7.2kwh **Ans B**
51. D
52. C
53. In a Kaleidoscope, the plane mirrors are inclined at angle  $60^\circ$  while in periscope, they are inclined at angle  $45^\circ$ . **Ans. A**
54. C
55. C
56. Calcium oxide is suitable for drying ammonia because it does not react with it. **Ans. B**
57. D
58. B
59. The conversion of less useful petroleum products to more useful ones is known as cracking. **Ans. B**
60. C- only sodium, potassium and ammonium trioxocarbonates are soluble in water.
61. For  $Na_2 CO_3$ , Molar mass =  $(23 \times 2) + 12$   
 $+ (16 \times 3) = 106 g/mol$   
No of moles,  $n = \frac{m}{M}$   
 $N = 5.3/106 = 0.05$  mole **Ans. A**
62. Brass is an alloy of copper and zinc while bronze is an alloy of copper and tin. **Ans. C**
63. A
64. A
65. A
66. C
67. Isomers have the same molecular formula but different structures. Isomerism may be structural, geometric or optical isomerism. **Ans. C**
68. The PH of an acid is below 7 while for a base, it is above 7. **Ans. D**
69. C- Mass Spectrometer
70. During rusting, iron is converted to iron (III) oxide (reduction-oxidation reaction). **Ans. D**
71. Fehling's solution is used for testing reducing sugars. Sucrose is not a reducing sugar, hence, it does not give a brick-red precipitate. **Ans. C**
72. Cryolite is useful in the electrolysis of alumina. Its chemical formula is  $Na_3AlF_6$ . **Ans. A**
73. B
74. Greenhouse effect is a gradual warming of our planet.  $CO_2$  is associated with this because it has the ability to retain infrared ray (heat ray) radiated by the air. **Ans. A**
75. C
76. A germinating seed requires oxygen to oxidize the simple sugar to  $CO_2$ , water and energy, a process known as aerobic respiration. **Ans. C**
77. Oxygen is important for the break down of food and pulmonary artery carries only deoxygenated blood. **Ans. A**

78. Mineral elements required in small quantities by plants include: zinc, copper, boron, manganese, molybdenum and chlorine. **Ans. A**
79. Trypsin is a digestive enzyme contained in the pancreatic juice. **Ans. C**
80. Cholera infection comes from what we eat or drink. **Ans. A**
81. C
82. Gastrin is a hormone not an enzyme. It regulates acid secretion in the stomach. **Ans. B**
83. The area above the cotyledons is a miniature shoot called the plumule. **Ans. C**
84. The islets of Langerhans found in the pancreas secretes two hormones- insulin and glucagon. Insufficient production of insulin causes diabetes **Ans. C**
85. Reducing sugars like glucose and fructose give brick red precipitate with fehling's solution while sucrose, a non-reducing sugar do not **Ans. D**
86. Root hairs are tubular-shaped tip growing cells that arise from root epidermal cells known as trichoblasts. **Ans. D**
87. Caryopsis is a one-seeded dry indehiscent fruit in which the pericarp becomes fused with the testa. e.g, rice, millet etc. **Ans. C**
88. Pasteurization is carried out at about 60°C for 30 mins. The higher the temperature, the less the time. **Ans. C**
89. D
90. Placenta is an organ that connects the developing fetus to the uterine wall. **Ans. C**
91. The part of the alimentary tract where a particular food is digested depends on the enzyme present. Pepsin (for protein) and Lipase (for carbohydrate) are present in the stomach, **Ans. C**
- 92.- D
93. Yam is a stem tuber. The terminal end of the underground stem contains the food reserve. **Ans. A**
94. Haptotropism is a tropic response of a plant organ to the stimulus of touch. **Ans. A**
95. D
96. The glottis leads to the larynx, the larynx to trachea and trachea to the lungs. **Ans. B**
97. Gall bladder is where bile, which is responsible for the emulsification of fats and oil is stored. **Ans. A**
98. Pollinators depress the keel of the flower and release stamens and pistil **Ans. B**
99. Biotic components are the living things while abiotic components are the non-living things. **Ans. A**
100. In continuous variation, one can be tall, another taller and so on. But in discontinuous variation, there is no intermediate. **Ans. B**

**NNAMDI AZIKIWE UNIVERSITY. AWKA  
POST- UME SCREENING EXERCISE, 2008/2009  
FOR  
MEDICINE, NATURAL SCIENCES, HEALTH SCIENCES  
AND TECHNOLOGY.  
INSTRUCTIONS**

1. Shade **FIRMLY** only one answer using **HB pencil only**.
2. You are allowed to make a second choice of course into any of the following: **Anatomy, Physiology, Pharmaceutical sciences, Science Education, Natural sciences (See the back of the OMR sheet for details).**
3. Shade your second choice of course in the column provided (column 8).

**Time allowed: 1 hour.**

**Choose the option opposite in meaning to the word that is underlined.**

1. The government is making concerted efforts at providing essential social facilities in the rural areas (A) dissipated (B) unconcerned (C) unsuccessful (D) uncontrolled.
2. The western allies frowned at their enemies' indiscriminate bombing of their territory. (a) Impartial b. selective c. unprovoked d. Divided.
3. The girl is very intelligent, but her jokes are rather outrageous. A. Offensive b. courageous c. pleasant d. Unwholesome.
4. We cannot but talk about his invaluable contributions to the affairs of the society a. worthless b. Costly c. Unrecognized d. Incalculable.
5. This average fertility figure of course conceals wide individual variations among the people; a. attracts b. covers c. exposes d. concludes.
6. Men living in an extended family know that they have to be responsible for the welfare of some other person's children. A. extensive b. nuclear c. neutral d. Contracted.
7. The appearance of the pall-bearers was extremely fascinating a. magnetic b. unorganized c. interesting d. Repulsive.
8. Many miners protested against the order to march into the coal pits. A. Strut b. amble c. trudge d. Ramble.
9. The nasty action will bring nothing but discredit to them. A. Honour b. share c. reward d. Disgrace.
10. The man's health has deteriorated in the hospital. A. Collapsed b. improved c. worsened d. Revived.

**Choose the option nearest in meaning to the word (s) or phrase (s) underlined.**

11. The boss made a clean sweep of all the old hands in the office. A. Completely got rid b. clearly swept the office c. made a quick-change d. made an adjustment.
12. Her anxiety was apparent to everyone present at the ceremony. A. Real b. visible c. Transparent d. Unknown.
13. Our experience on board the aircraft is nothing to write home about. A. Not remarkable b. not unpleasant c. nobody's business d. not a home affair.
14. The rampage was organized and directed by the militant ones among the students.  
a. Soldier  
b. rebellious ones  
c. belligerent ones  
d. Commandoes.
15. The governor advised his people to get off the beaten tracks in their approach to community matters. A. Use the old roads b. make the tracks better c. find new ways d. avoid beating about the bush.
16. It was their custom to keep an open house on Sundays.(A)welcome all visitors. (B)keep the shutters. (C)leave the house open.(D)expose the whole house
17. The president made a passionate appeal for calm(A)inflamed (B)disturbing(C)intense(D)lively.
18. Dauda stole the day takings from the bakery  
(A)receipts(B)collections(C)contributions  
(D)offerings.
19. You do not need to stutter in order to show your excitement.(A)jump about (B)shout (C)sob  
(D) stammer.
20. What embarrasses me is the stealthy way in which the new servant goes about his duties in this house. (A) indolent (B) furtive (C) boisterous  
(D) agile.
21. The way he handled the whole issue was rather despicable.(A) Disturbing (B) likeable  
(C) contemptible (D) frustrating.
22. The authenticity of the reporter's claims should be established before taking further actions on the matter.(A)facts (B) source (C) evidence  
(D) genuineness.
23. After careful investigation, the police found no iota of truth in Ibrahim's allegations (A) quota (B) grain  
(C) evidence (D) statement.
24. The case was thrown out because the court lacked jurisdiction (A) jurors to help the judge (B) authority  
(C) prosecutors (D) appellate powers.
25. The chief will launch the fund-raising appeal.  
(A) make a speech at. (B)eat his afternoon meal during (C) travel by boat to (D) start off
26. Okeke has been employed but he is unhappy because it is a run of the mill job.(A) a boring  
(B) a poor paying (C) a tiring (D) an ordinary
27. I would like to believe that this brilliant performance of yours is not just a flash in the pan.  
a. Repeated occurrence b. Normal happening  
c. Flashy happening d. Chance occurrence
28. As the wedding day approached the bride began to develop cold feet.  
(A) fall sick (B) feel cold  
(C) be reluctant (D) become aggressive.
29. I told my brother to get the matter off his chest as soon as possible.  
(A) give serious thought to the matter  
(B)say what he has been anxious to say  
(C) make a brief comment  
(D) state his points clearly.
30. He has a big heart but he is inept at following a witty conversation.  
(A)large (B) huge (C) warm (D) fragile.
31. The clerk refused to answer for the mistakes made by the manager and his assistants.  
(A) reply to (B) give an answer  
(C) accept responsibility for (D) account for.
32. Most of his observations were wide of the mark.  
(A) comprehensible. (B) irrelevant  
(c) pertinent (D) unacceptable.
33. I didn't think she could be so easily taken in by his pretences.  
(A) flattered (B) impregnated (C) deceived  
(D) overcome.
34. Do you have the same aversion as I do for war films  
(A) bitterness (B) dislike (C) criticism  
(D) preference.
35. His summary of the meeting was brief and to the point  
(A) precise (B) accurate (C) exact (D) crucial.
36. The minister hit on a plan to retain his post after many months of lobbying  
(A) drew up a plan (B)discovered a plan  
(B) selected a plan (C) designed a plan.
37. My friend will hate his uncle forever because he left him in the lurch in his Hour of need. (A) abandoned him(B) punished him (C) disinherited him (D)despised him.

38. Our school prefect is two officious and we all hate him because of his behaviour  
(A) efficient (B) efficacious (C) over-zealous (D) active
- Choose the word(s) or phrase(s) which best fill(s) the gap(s).**
39. He regarded the betrayal of his friend as a stab \_\_\_ the back. (A) on (B) at (C) in (D) from.
40. Our manager has instructed that \_\_\_ of customers must be barred from our Bank. (A) those type (B) that type (C) that types (D) this types.
41. He was not a very \_\_\_ student when I first met him but the year \_\_\_ his character ultimately. (A) mature/mature (B) matured/mature (C) mature/matured (D) matured/matured.
42. Because of the \_\_\_ he did to my car, I am going to sue him for \_\_\_\_\_.  
(A) damage/damages (b) damages/damage (C) damages/damages (D) damage/damage.
43. Although I am watching television, I \_\_\_ what you are saying. (A) am hearing (B) can hear (C) have heard (D) was hearing.
44. One of the rioters who \_\_\_ arrested yesterday \_\_\_ released. (A) was/had been (B) were/have been (C) was, have been (D) were/has been.
45. The teacher invited Ifeanyi and \_\_\_ to his office. (A) myself (B) me (C) I (D) himself.
46. Joseph and his wife are always fighting. The \_\_\_ to be drawn from this is that they are not happy together (A) reference (B) inference (C) difference (D) deference.
47. The government has provided new \_\_\_ for the local government polls. (A) guard lines (B) guide lines (C) guardlines. (D) guidelines
48. The manager was angry with Okoye for \_\_\_ seeds of discord among the workers.  
(A) planting (B) sewing (C) cultivating (D) sowing.
49. I looked for you all over the campus but I could not \_\_\_ you. (A) find (B) see (C) meet (D) catch.
50. \_\_\_ is always superior to any other in town.  
(A) There's (B) Theirs (C) Their's (D) There
51. Two radioactive elements A and B have half lives of 100 and 50 years, respectively. Samples of A & B initially contain equal number of atoms. What is the ratio of the number of the remaining atoms of A to that of B after 200 years (A) 4:1 (B) 2:1 (C) 1:1 (D) 1:4
52. A boy standing some distance from the foot of a tall cliff claps his hands and hears echo 0.5s later. If the speed of sound is 340m/s. How far is he from the cliff? (A) 17m (B) 34m (C) 85m (D) 170m.
53. Which of the following is not correct about isotopes of an element? they have (A) the same neutron number (B) the same proton number (C) the same number of electrons (D) different physical properties.
54. Which of the following is not an electromagnetic radiation? (A) X-ray (B) radio waves (C) sunlight (D) sound waves
55. Cloud formation is the direct result of (A) precipitation (B) vaporization (C) condensation (D) sublimation.
56. Water boils at a lower temperature when heated at the top of a mountain than at sea level because at the top of the mountain the (A) saturation vapour pressure of water is higher than at sea level (B) sun adds more heat to the water (C) relative humidity of the atmosphere is lower (D) pressure of the atmosphere is lower.
57. The main reason why rice cooks faster in a pressure cooker than in a cooking pot is that (A) less heat escapes from the cooker (B) the vapour pressure in the cooker is constant (C) the boiling point of water in the cooker is raised (D) the vapour pressure in the cooker decreases.
58. In which of the following media would sound waves travel faster? (A) kerosene (B) alcohol (C) iron (D) air.
59. Which of the following phenomena is a practical evidence for the existence of the continual motion of molecules?  
(A) Translational motion (B) rotational motion (C) brownian motion (D) oscillatory motion.
60. Each of the following physical quantities is classified as a vector or a scalar quantity. Which of the classifications is correct? (A) electric potential (vector) (B) momentum (scalar) (C) Gravitational field intensity (scalar) (D) magnetic flux density (vector).
61. The friction which exists between the layers of liquid in relative motion is called (A) capillarity (B) surface tension (C) viscosity (D) cohesion.
62. Which of the following simple machines is a second class lever? (A) wheel barrow (B) crowbar (C) claw hammer (D) seesaw.
63. Which of the following types of motion does a body undergo when acted upon by a couple? (A) vibrational (B) translational (C) rotational (D) random.
64. The frequency of a swinging pendulum is

- the (A)number of complete oscillations the pendulum makes in one second (B)number of amplitudes the bob makes in one second (C)angle the bob swings through in one second (D)distance the bob covers in one second.
65. Which of the following quantities has the same unit as energy?(A)power (B)work (C)force (D)momentum.
66. Which of the methods can be used to separate a mixture of two miscible liquids with different boiling points? (A)decantation (B)distillation (C)evaporation (D)filtration.
67. pig iron is brittle because it contains (A)a high percentage of carbon as impurity (B)calcium trioxosilicate (iv) (C)unreacted haematite (D)undecomposed limestone.
68. Which of these metals will not liberate hydrogen from dilute HCl? (A) copper (B) Iron (C)magnesium (D) Zinc.
69. Radium is used as a tracer in medical research because it \_\_\_\_\_ (A)is monatomic (B)is radioactive (C)is a noble gas (D)has complete valence shell.
70. In linear molecules, the bond angle is (A)90° (B)140° (C)180° (D)120°
71. A sodium atom and a sodium ion have the same (A)number of neutrons (B)number of electrons (C)electric charge (D)chemical properties.
72. An increase in the pressure of a gas results in a decrease in its (A)mass (B) vapour density (C) volume (D) temperature .
73. An acid is a substance which in the presence of water produces (A)salts (B)oxygen (C)hydroxonium (D)effervescence.
74. Which of the following is a general method of preparing acids? (A)direct combination of constituent elements (B) double decomposition involving a salt solution (C) reaction between an anhydride and water (D)Dissolution of hydroxides followed by neutralizations.
75. Which of the following ions will migrate to the cathode during electrolysis. (A) zinc ions (B) chloride ions (C) sulphide ions (D) tetraoxosulphate (vi) ions.
76. What quantity of electrons (in mole) is lost when one mole of iron(II) ions is oxidized to iron (III) ions? (A)5 moles (B)4 moles (C)1 mole (D) 3 moles.
77. The common feature of reactions at the anode is that (A)electrons are consumed (B)oxidation is involved (C)ions are reduced (D)the electrode dissolves
78. Ethene undergoes mainly addition reaction because it is (A)a gas (B) a hydrocarbon (C)unsaturated (D)a covalent compound.
79. The position of equilibrium in a reversible reaction is affected by(A)particle size of the reactants (B)change in concentration of the reactants (C)presence of a catalyst (D)change in size of the reaction vessel
80. The reaction between alkanolic acids and alkanols in the presence of a mineral acid is known as (A)saponification (B) hydrolysis (C) polymerization (D)esterification
81. A fundamental similarity between nervous and hormonal system is that both (A) involves chemical transmission (B) have widespread effects (C) shed chemicals into the blood stream (D) evoke rapid response.
82. The irreversible life process by which new protoplasm is added to increase the size and weight of an organism can be termed (A)anabolism (B)catabolism (C)growth (D)development.
83. If an organism obtains its food by means of haustoria, it is said to be (A)holophytic (B)heterophytic (C)saprophytic. (D)parasitic.
84. The main waste products formed in plants are (A)alkaloids, tannins and resins (B)water, alkaloids and carbon dioxide (C)oxygen, carbon dioxide and alkaloids (D)water, carbon dioxide and oxygen.
85. In the mammalian respiratory system, exchange of gases occurs in the (A)lungs (B) bronchi (C) bronchioles. (D)alveoli
36. If the phloem of a healthy plant is killed by heat treatment, the (A)upward movement of salts will cease (B)manufacture in the leaves will accumulate (C)whole plants will die immediately (D)leaves of the plants will become yellow
87. If an animal has diastema, it would not possess (A)incisors (B)canines (C)premolars (D) molars.
88. The major function of the swim bladder in fishes is (A)breathing (B)buoyancy (C) swimming (D) diving.
89. Insects and millipedes have many features in common except (A)jointed appendages (B) compound eyes (C)segmented body (D) exoskeleton.

**SOLUTION 2008/2009  
SOLUTION TO 2008/ 2009 NAU POST-UME  
QUESTIONS FOR MEDICINE, NATURAL SCIENCES,  
HEALTH SCIENCES.**

- |   |   |
|---|---|
| <p>90. What is the function of trichocyst in paramecium? (A) movement (B) defence (C) excretion (D) reproduction.</p> <p>91. The sum of the angles of regular polygon is <math>2520^\circ</math>. How many sides does the polygon have (A) 20 (B) 18 (C) 15 (D) 16</p> <p>92. If the exterior angles of a quadrilateral are <math>y^\circ</math>, <math>(2y+5)^\circ</math>, <math>(y+15)^\circ</math> and <math>(3y-10)^\circ</math>, find <math>y^\circ</math> (A) 61.43 (B) 60 (C) 51.43 (D) 50.</p> <p>93. Calculate the surface area of a sphere of radius 7cm (take <math>\pi = 22/7</math>). (A) <math>86\text{cm}^2</math> (B) <math>154\text{cm}^2</math> (C) <math>616\text{cm}^2</math> (D) <math>1434\text{cm}^2</math>.</p> <p>94. If <math>3 \log a + 5 \log a - 6 \log a = \log 64</math>, what is a? (A) 4 (B) 6 (C) 8 (D) 16.</p> <p>95. A sales girl gave a change of N1.15 to a customer instead of ? N1.25. Calculate her percentage error (A) 10% (B) 2% (C) 8% (D) 0.8%.</p> <p>96. The ages of three men are in the ratio 3:4:5. If the difference between the ages of the oldest and youngest is 18 years. Find the sum of the ages of the three men. (A) 45 years (B) 72 years (C) 108 years (D) 216 years.</p> <p>97. Which of the following numbers is a perfect cube? (A) 350 (B) 504 (C) 950 (D) 1728</p> <p>98. A car moves at an average speed of 30km/h. How long does it take to cover 200 meters? (A) 2.4 sec (B) 24 sec (C) 144 sec (D) 240 sec.</p> <p>99. If N varies directly as M and N = 8 when M = 20. Find M when N = 7. (A) 13 (B) 15 (C) <math>17\frac{1}{2}</math> (D) <math>18\frac{1}{2}</math></p> <p>100. Express 0.0462 in standard form. (A) <math>0.462 \times 10^{-1}</math> (B) <math>0.462 \times 10^{-2}</math> (C) <math>4.62 \times 10^{-1}</math> (D) <math>4.62 \times 10^{-2}</math></p> | <p>1. A - dissipated</p> <p>2. B - selective</p> <p>3. C - pleasant</p> <p>4. A - worthless</p> <p>5. C - exposes</p> <p>6. B - nuclear</p> <p>7. D - repulsive</p> <p>8. C - trudge (opposite of march)</p> <p>9. A - honour</p> <p>10. B - improved</p> <p>11. A - completely got rid</p> <p>12. B - visible</p> <p>13. A - not remarkable</p> <p>14. B - rebellious ones</p> <p>15. C - find new ways</p> <p>16. A - welcome</p> <p>17. C - intense</p> <p>18. B - collections</p> <p>19. D - stammer</p> <p>20. B - furtive</p> <p>21. C - contemptible</p> <p>22. D - genuineness</p> <p>23. C - evidence</p> <p>24. B - appellate powers</p> <p>25. D - start off</p> <p>26. B - a poor paying</p> <p>27. D - chance occurrence</p> <p>28. C - be reluctant</p> <p>29. B - say what he has been anxious to say</p> <p>30. A - large</p> <p>31. C - accept responsibility for</p> <p>32. B - irrelevant</p> <p>33. C - deceived</p> <p>34. B - dislike</p> <p>35. C - exact</p> <p>36. B - discovered a plan</p> <p>37. A - abandoned him</p> <p>38. C - over-zealous</p> <p>39. C - in</p> <p>40. A - those type</p> <p>41. C - mature/matured</p> <p>42. A - damage/damages</p> <p>43. B - I can hear</p> <p>44. D - were/has been</p> <p>45. B - me. You can break the sentence into two to help you. The teacher invited Ifeanyi; the teacher invited me.</p> <p>46. B - inference</p> <p>47. D - guidelines</p> <p>48. D - sowing</p> <p>49. A - find</p> <p>50. C - theirs</p> |
|---|---|

51. Let  $N_0$  be Initial no of atoms also, let the fraction o of  $N_0$  remaining be  $1/2^n$ , where  $n$ = no of half - lives.  
 For A, 200 yrs = 2 half- lives  
 $D/4$  the remaining atom =  $N_0/2^2 = N_0/4$   
  
 For B, 200 yrs = 4 half-lives  
 Remaining atom =  $N_0/2^4 = N_0/16$   
  
 Hence: A:B =  $N_0/4$  divided by  $N_0/16$   
 $= N_0/4 \times 16/N_0$   
 $= 4/1$   
**A:B = 4:1                      Ans. A**
52. Using  $V = \frac{2x}{t}$   
 $X = Vt = \frac{340 \times 0.5}{2} = 85m$     **Ans .C**
53. A  
 54. D  
 55. C  
 56. D  
 57. C  
 58. Sound travels fastest in solids followed by liquids, then gases. **Ans. C**  
 59. C  
 60. D  
 61. C  
 62. In second class lever, the load is between the effort and the fulcrum **Ans. A**  
 63. C  
 64. A  
 65. B  
 66. B  
 67. A  
 68. A  
 69. B  
 70. C  
 71. A  
 72. C  
 73. C  
 74. C  
 75. It is positive ions that migrate to the cathode during electrolysis. **Ans. A**  
 76. C  
 77. Oxidation takes place in the anode while reduction takes place in the cathode. **Ans. B**  
 78. C  
 79. B  
 80. Esterification is the reaction between alkanolic acids and alkanols to form esters and water. **Ans. D**  
 81. The effect of the secretions of both nervous and hormonal systems is not limited at the site of production but is widespread **Ans. B**  
 82. C  
 83. Parasitic plants send haustoria to the vascular bundles of the host, from where it obtains food and water. **Ans. D**  
 84. Water (from transpiration),  $CO_2$  (from respiration at night) and oxygen (from photosynthesis during the day) are the main waste products of plants.

- Ans. A**
85. Alveoli are thin-walled and abundantly surrounded by capillaries, hence diffusion of oxygen and  $CO_2$  occurs there. **Ans. D**  
 86. It is through the phloem that manufactured food substances in the leaves are translocated. **Ans. B**  
 87. In the dentition of herbivore e.g. rabbit, canines are absent, instead there is a wide space called diastema. **Ans. B**  
 88. B  
 89. All arthropods have chitinous exoskeleton, jointed appendages and segmented body. **Ans. B**  
 90. Trichocysts contain filaments which can be discharged either to trap a prey or used for offense and defense **Ans. B**  
 91.  $(n - 2) \times 180 = 2520$   
 $n - 2 = 2520/180$   
 $n - 2 = 14$   
 $n = 16$  sides    **Ans. D**  
 92. Sum of ext.  $\angle S = 360$   
 $Y + 2y + 5 + y + 15 + 3y - 10 = 360$   
 $7y - 10 = 360$   
 $7y = 350$   
 $Y = 50$     **Ans. D**  
 93. For a sphere surface area =  $4\pi r^2$   
 $= 4 \times 22/7 \times 7^2$   
 $= 616cm^2$     **Ans. C**  
 94.  $3\log a + 5\log a - 6\log a = \log 64$   
 $(3 + 5 - 6) \log a = \log 64$   
 $2\log a = \log 64$   
 $\log a^2 = \log 64$   
 Then,  $a^2 = 64$   
 And  $a = 8$     **Ans. c.**  
 95. Error =  $1.25 - 1.15 = 0.1$   
 % error = error/ Actual value x 100%  
 $= 0.1/1.25 \times 100$   
 $= 8\%$     **Ans. C**  
 96. Sum of ratio =  $3 + 4 + 5 = 12$   
 Let the sum of the ages be  $x$   
 $\frac{5x}{12} - \frac{3x}{12}$   
 $\frac{2x}{12} = 18$   
 $\frac{x}{6} = 18$   
 Then,  $x = 108$  yrs.    **Ans. C**  
 97.  $\sqrt[3]{1728} = 12$     **Ans. D**  
 98. In m/s, average speed  
 $= 30 \times 1000$   
 $\frac{60 \times 60}{60}$   
 $= 8.33$  m/s  
 From  $v = x/t$ ,  
 $t = x/v = 200/8.33 = 24$ sec.    **Ans. B**  
 99.  $N = km$   
 When  $N = 8$ ,  $M = 20$   
 Then,  $8 = 20k$   
 And  $k = 8/20$   
 When  $N = 7$ ,  $M = ?$   
 I.e  $7 = 8/20 \times M$   
 $M = 20 \times 7/8$   
 $= 35/2$   
 $= 17 \frac{1}{2}$     **Ans. C**
100. D



NNAMDI AZIKIWE UNIVERSITY, AWKA  
POST-UTME SCREENING EXERCISE 2009/2010  
FOR

MEDICINE, NATURAL, SCIENCES, HEALTH  
SCIENCES AND TECHNOLOGY, BASIC MEDICAL  
SCIENCES AND PHARMACEUTICAL SCIENCES.

INSTRUCTIONS:

1. Shade **FIRMLY** one answer using HB pencil only.
2. You are allowed to make a second choice of course into any of the following: anatomy, physiology, pharmaceutical sciences, science education (see the back of the OMR sheet for details).
3. Shade your second choice of course in the column provided (column 8)

Time allowed: 1 hour date July 7, 2009

Choose the option opposite in meaning to the word underlined in each of the following sentences.

1. Okoro is an amateur wrestler a. skilful  
b. good c. professional d. strong
  2. The instructions on the examination paper are explicit a. simple b. Ambiguous  
c. detailed d. definite
  3. The doctor tried to alleviate his patient's pain a. relieve b. worsen c. kill d. cure
  4. Ojo's response infuriated his wife. A. annoyed  
b. pleased c. surprised d. confused.
  5. He accepted a mundane task without hesitation a. great b. lowly c. menial d. moderate.
  6. It is unique opportunity for her to demonstrate the reality of her faith  
a. strange b. usual c. golden d. usual.
  7. Her identification with the king is publicly known. A. hatred b. dissociation  
c. relationship d. intimacy
  8. The economic situation in Nigeria is obviously gloomy. b. encouraging  
b. moody c. unknown d. regrettable
  9. One wonders if the situation will improve  
a. brighten b. diminish c. disintegrate  
d. worsen.
  10. Language teachers believe that grammar exercises stretch the mind. a. expand  
b. ruin c. enrich d. restrict
  11. These two books are identical a. alike  
b. similar c. different d. equal.
- choose the option nearest in meaning to the words or

phrases underlined in the following sentences.

12. The police ran the criminal to earth.  
a. Jailed him b. Knocked him down  
c. Discovered him d. Buried him.
13. If your life is in turmoil, always take courage a. Devastation b. Crisis c. Trial d. Tragedy
14. Do you know one of the most astounding events of my life? A. Special b. Amazing  
c. Serious d. Outstanding.
15. Nneka is suffering from the consequences of alienation. A. Confinement b. Isolation  
c. Enclosure d. Imprisonment.
16. The terms of the contract stuck in my throat  
a. Were beyond me b. Were not clear  
c. Were ambiguous d. Became obsolete.
17. He was asked to give copious examples to appear convincing a. concrete b. rigid  
c. cogent d. many.
18. Some children mimic their teachers.  
A. imitate b. mime c. ridicule d. tease.
19. He works long hours collecting trash to eke out a livelihood a. try a living b. struggle for a living  
c. make a living d. carve out a living
20. Everybody complained of a lean harvest last year. A. Surplus b. Abundant c. Poor d. Thin.
21. He is very modest in his demands a. Honest  
b. Bogus c. Extravagant d. Humble.
22. The patient disregarded the advice of the doctor  
a. Ignored b. Disobeyed c. Questioned  
d. Respected.
23. The newly elected leader has pledged to ensure better life for the citizens a. vowed b. a g r e e d  
c. undertaking d. undertaken.
24. Statesmen are revered for their objectivity  
a. Referred b. respected c. remembered  
d. rejected.
25. He has been advised to keep his head, the confusion notwithstanding. a. Avoid being beaten or insulted  
b. Keep calm c. Save his head  
d. Prevent being beheaded .
26. Tunde always puts his shoulder to the wheel  
a. Sits with his shoulders straight when he is driving b. Works energetically at the task in hand  
c. Performs task assigned to him grudgingly  
d. Holds the steering wheel firmly when he is driving.
27. He reneged on the agreement between him and his employees a. Kept b. Failed to keep  
c. Failed to approve d. Failed to sign.

28. He is credulous a. Credible b. Creditable c. Gullible d. Fallible.
29. The company has gone under a. Suffered some losses b. Broken up c. Become broke d. Become bankrupt.
43. Edward is prepared for a \_\_\_\_\_ with his opponent following his defeat last season. A. show-off B. show-down C. show-out D. show-up.
44. Victor refused to be \_\_\_\_\_ though he has written the same examination three times A. sad B. placate C. frustrated D. indifferent.

**Fill the gap with appropriate option in each of the following sentences**

30. Many people believe that nuclear power will solve our energy problems \_\_\_\_\_, this has not been proved to be true a. Indeed b. But c. However d. On the contrary.
31. \_\_\_\_\_, sign post words are useful to readers. A. Conclusively b. To conclude c. In conclusion d. The conclusion.
32. Every programming language and software package \_\_\_\_\_ limitations. A. have its b. Have their c. Has its d. Has their.
33. A programme of good exercise may help a person fight \_\_\_\_\_ cold a. Out b. At c. with d. Off
34. Baba and \_\_\_\_\_ participated in the tournament. a. Him b. His c. He d. He's
35. It was \_\_\_\_\_ who fought the civil war. A. They b. Them c. Those d. Theirs
36. The physicians have more people in \_\_\_\_\_ waiting rooms than \_\_\_\_\_ have ever had. A. His/he b. There/they c. Them/they d. Their/they
37. Before mechanization, workers \_\_\_\_\_ water out of fabrics with their hands. a. Wring b. Wrung c. Wrang d. Wringed.
38. Four engineers \_\_\_\_\_ on this system since march. A. Worked b. Are working c. Had worked d. Have been working.
39. Having worked all night, the security man \_\_\_\_\_ a sense of accomplishment a. Had felt b. Felt c. Is feeling d. Has felt
40. Three quarters of the physics class \_\_\_\_\_ dramatically a. Improve b. Improves c. Are improving d. Is improving.
41. A number of students \_\_\_\_\_ missed the opportunity to re-register carry-over courses. a. Is b. Has c. Have d. Do
42. It seems to be a well thought \_\_\_\_\_ scheme A. over B. out C. off D. into
45. On his \_\_\_\_\_ of office, the new president announced some drastic measures A. assumption B. ascension C. acceptance D. appointment
46. The \_\_\_\_\_ was filed \_\_\_\_\_ the Enugu magistrate court. A. suit/in B. case/in C. suit/at D. case/of
47. The plaintiff \_\_\_\_\_ the court to restrain the defendants from further action a. Asked b. Begged c. Demanded of d. Prayed.
48. My experience in Lagos last week was \_\_\_\_\_ about A. something to excite B. nothing to explain at home C. nothing to write home D. something to celebrate about
49. \_\_\_\_\_ him around, I would have informed you. A. Had I seen B. Have I seen C. Should I see D. If I saw.
50. Adam is one of the boys who always \_\_\_\_\_ good work a. does b. would do c. do d. done.

*Identify the correct answer to each question below:*

51. The density of 400 cm<sup>3</sup> of palm oil was 0.9 g/cm<sup>3</sup> before frying. If the density of the oil was 0.6 g/cm<sup>3</sup> after frying, assuming no loss of oil due to spilling, its volume was a. 360cm<sup>3</sup> b. 600cm<sup>3</sup> c. 240cm<sup>3</sup> d. 800cm<sup>3</sup>
52. If a given mass of gas at constant pressure obeys the relation **volume is proportional to the absolute temperature** the gas is said to obey a. Hooke's law b. Boyle's law c. Newton's law d. Charles's law.
53. Two closed vessels contain equal volume of boiling water and are identical except that one is blackened on the outside while the other is polished which of the following is correct? A. The polished vessel will cool faster because a polished surface is a good radiator B. The polished vessel will cool faster because it will absorb less heat from the room C. The black vessel will cool faster because it is a better conductor of heat D. The polished vessel will cool faster because it reflects heat better.
54. When the vapour of a substance is in equilibrium with its own liquid, it is said to be a. Gaseous b. Diffused c. Saturated d. Unsaturated.
55. Which of the following statements is correct? The magnetized state of an iron bar can be destroyed completely by a. Heating the bar to a high

- temperature b. Breaking the bar c. Connecting opposite poles with a small piece of iron d. Placing the bar inside a strong magnetic field.
56. An electric cell has an internal resistance of 2 ohms. A current of 0.5A is found to flow when a resistor of 5 ohms resistance is connected across it. What is the electromotive force of the cell? A. 5 volts b. 3.5 volts c. 2.5 volts d. 1.0 volt.
57. Which of the following is the correct definition of half-life:  
a. The time it takes a radioactive material to decay to half of its original quantity  
b. The average life-time of a radioactive material  
c. Half the period a radioactive material decays completely d. Half of the decay constant.
58. A concave lens of focal length 20 cm forms an image  $\frac{1}{2}$  the size of the object. The object distance is a. 100 cm b. 100/9cm c. 60cm d. 60/7 cm
59. Which of the following is true of atoms?  
A. atoms are indestructible b. All atoms of a pure substance or element are identical c. atoms of different substances have different weights d. All of the above.
60. Which of the following statements is true of the law of universal gravitation?  
A. Any two bodies attract each with a force which is proportional to the difference of their masses  
B. Any two bodies attract each other with a force which is inversely proportional to the square of the distance between them.  
C. Any two bodies attract each other with a force which is proportional to the product of their masses and inversely proportional to the square of the distance between them. D. Any two bodies attract each other with a force which is directly proportional to the square of the distance between them.
61. Zinc oxide is a (A) basic oxide b. acidic oxide c. amphoteric oxide d. Neutral oxide.
62. When sodium chloride and metallic sodium are each dissolved in water a. Both processes are exothermic b. Both processes are endothermic c. The dissolution of metallic sodium is exothermic d. The dissolution of metallic sodium is endothermic.
63. The oxidation state of chlorine in potassium chlorate is a. +1 b. +2 c. +3 d. +5
64. When air, which contains the gas oxygen, nitrogen, carbon dioxide, water vapour and the rare gases, is passed through alkaline pyrogallol and then over quicklime, the only gases left are a. Nitrogen and carbon dioxide b. Nitrogen and rare gases c. The rare gases
- D. Nitrogen and oxygen
65. When heat is absorbed during a chemical reaction the reaction is said to be a. thermodynamic b. Exothermic c. Isotherm d. Endothermic.
66. The nucleus of an atom contains a. Protons only b. Neutrons only c. Protons and electrons d. Protons and neutrons.
67. Hydrochlorous acid is used as a bleach because a. It is a strong acid b. It yields chlorine readily in pure water c. It is an oxidizing agent D. It is a reducing agent
68. The most common type of chemical reaction which alkanes undergo is a. Substitution b. Addition c. Condensation d. Polymerization.
69. In titration involving sodium hydroxide solution and dilute hydrochloric acid, where would you place the base? A. In the beaker b. In the conical flask c. In the burette d. In the standard flask
70. Which of the following substances are all made by the process of polymerization?  
A. Nylon and soap b. Ethanoic acid, margarine and ethanol C. Nylon and artificial rubber D. Nylon and margarine
71. Plants adapted for life in salty marsh are called a. hydrophytes b. Xerophytes c. Halophytes d. Epiphytes.
72. Which of these is the terminal portion of the alimentary canal of a mammal? A. Oesophagus b. Stomach c. Rectum d. Appendix.
73. All living organisms a. Photosynthesize b. Respire c. Move d. Feed
74. Which of these tissues serve the function of support and water conduction? A. Parenchyma b. Collenchyma c. Xylem d. Sclerenchyma.
75. Which of the substances listed below is a trace element from plants a. Potassium b. Sodium c. Copper d. Nitrate.
76. A secchi disc is used in the determination of a. Tides b. Waves c. Current velocity d. Turbidity.
77. The carrier of the hereditary characters in plants and animals is the a. Cell b. Nucleus c. Chromosome d. Gene.
78. Which of these is not an enzyme? A. Pepsin b. Gastrin c. Amylase d. Chymotrypsin
79. Which of these is not an excretory organ?  
A. Lungs b. Kidney c. Leaf d. Large intestine.

**NNAMDI AZIKIWE UNIVERSITY POST UTME PAST QUESTIONS COMILED BY GRACE GROUP, UNIZIK IN  
PARTNERSHIP WITH BARIGRACE SERVICES AND www.fiisms.com**

80. Which of these diseases cannot be controlled by killing the vectors? A. River blindness b. Malaria c. Bilharzia d. Cholera
81. A sugar solution was boiled with fehling's solutions A and B and the colour remained blue. The sugar tested was a. Glucose b. Maltose c. Fructose d. Sucrose.
82. Alkaline pyrogallol was used in an experiment. That experiment must have been connected with a. Excretion b. Germination c. Digestion d. Photosynthesis.
83. The plumule is best described as a. Part of the cotyledon b. Part of the endosperm c. Miniature shoot d. Structure near the micropyle.
84. A dry indehiscent winged fruit formed from one carpel is known as a. Schizocarp b. Caryopsis c. Samara d. Nut.
85. A gland in the human body secretes two hormones; one of which causes a disease called diabetes when there is a deficiency. Which of these organs produces the hormone? A. Spleen B. Thyroid C. Pancreas D. Adrenal.
86. One of the following statements is not true of viruses A. They are microorganisms B. They are smaller than bacteria. C. They can be seen with an ordinary light microscope D. They cause polio and small pox
87. The digestive enzyme that coagulates protein in milk is A. Rennin B. Ptyalin C. Pepsin D. Trypsin
88. Osmic acid boiled with a solution of food substance gave a black precipitate. This indicates the presence of A. Proteins B. Fats and oils C. Amino acids D. Starch
89. Members of the phylum protozoa use the contractile vacuole to A. Remove excess food B. Movement C. Remove excess water D. For digestive.
90. The main function of the petal of a flower is to a. Attract pollination agents b. Protect the flower while still in bud c. Serve as landing stage for insects d. Protect the inner parts from desiccation.
91. In one and half hours, the minute hand of a clock rotates through an angle of a.  $90^\circ$  b.  $180^\circ$  c.  $540^\circ$  d.  $640^\circ$
92. A group of 14 children received the following scores in a reading test: 35, 35, 26,26, 26, 29,29,29,12,25,25,25,25,17. What was the median score? A. 29 b. 26 c. 23 d. 25
93. By selling an article for ₦45.00, a man makes a profit of 8%. For how much should he have sold it in order to make a profit of 32% A. ₦180.00 B. ₦ 59.00 C. ₦ 55.00 D. ₦58.00
94. Seven (7) pupils of average age 12 years leave a class of 25 pupils of average age 14 years. If 6 new pupils of average 11 years join the class, what is the average age of the pupils now in the class a. 13 years b. 13 years 5 months c. 13 years 10 months d. 11 years.
95. A school girl spends  $\frac{1}{4}$  of her pocket money on books and  $\frac{1}{3}$  on dresses. What fraction remains? A.  $\frac{5}{6}$  b.  $\frac{5}{12}$  c.  $\frac{7}{12}$  d.  $\frac{1}{6}$
96. Each interior angle of a regular polygon is  $108^\circ$ , how many sides has it? A. 5 b. 7 c. 9 d. 14.
97. Find correct to two decimal places, the mean of 9,13,16,17,19,23,24 a. 23.00 b. 17.29 c. 16.50 d. 16.33.
98. A boy walks 800m in 20 minutes. Calculate his average speed in km per hour. A. 2.4 km per hour B. 4.0 km per hour C. 16 km per hour D. 24 km per hour.
99. The sides of two cubes are in the ratio of 2:5. What is the ratio of their volumes? A. 4:5 b. 8:15 c. 6:125 d. 8:125
100. A man bought 220 mangoes at ₦5x. He sold each 3x kobo and made a gain of ₦8.00. Find the value of x a. 2 b. 5 c. 6 d. 10

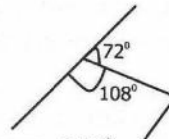
SOLUTION TO NAI POST UME (2009/2010)

1. C - professional
2. B - ambiguous
3. B - worsen
4. B - pleased
5. A - great
6. B - usual
7. B - dissociation
8. B - encouraging
9. D - worsen
10. D - restrict
11. C - different
12. C - discovered him
13. B - crisis
14. B - amazing
15. B - isolation
16. A - were beyond me
17. D - many
18. A - imitate
19. C - make a living
20. C - poor
21. D - humble
22. A - vowed
23. A - ignored
24. B - respected
25. B - keep clam
26. B - works energetically at the task in hand
27. B - failed to keep
28. C - gullible
29. D - become bankrupt
30. C - However
31. C - In conclusion
32. When "every" is used a singular noun and a singular verb should follow. **Ans. C**
33. D - off
34. C - He (Try breaking the sentence into groups)
35. A - They
36. D - Their/they
37. B - wrung
38. D - have been working
39. B - felt
40. D - is improving ("class" here is singular, hence, a singular verb must follow).
41. C - have
42. C - off
43. B - show-down
44. C - frustrated
45. A - assumption
46. C - suit at
47. D - prayed
48. C - nothing to write home
49. A - had I seen
50. C - do
51. Density,  $d$  varies inversely as volume. I.e  
 $d_1 V_1 = d_2 V_2$   
 $V_2 = d_1 V_1 / d_2$   
 $= 0.9 \times 400 / 0.6$   
 $V_2 = 600 \text{cm}^3$  **ANS B**
52. D
53. C
54. C
55. Demagnetization can be achieved by electrical method, mechanical method and by heating.  
**Ans. A**
56. Using  $E = I (R + r)$   
Where  $r = 2$ ,  $I = 0.5$ ,  $R = 5$   
 $E = 0.5 (5 + 2)$   
 $= 0.5 \times 7 = 3.5V$  **ANS. B**
57. A
58. Magnification,  $M = \frac{1}{2} = V/U$   
then,  $U = 2V$   
using  $1/U + 1/V = 1/F$   
 $1/2V + 1/V = 1/20$   
 $3/2V = 1/20$   
Then,  $V = 10 \times 3 = 30\text{cm}$   
Hence,  $U = 2V = 60 \text{ cm}$  **ANS C**
59. D
60. C
61. C
62. C
63. Potassium chlorate is  $\text{KClO}_3$   
Let the oxidation no of Cl be  $x$ ,  
Then,  $+1 + X + (-2 \times 3) = 0$   
 $1 + X - 6 = 0$   
 $X = +5$  **ANS D.**
64. Alkaline pyrogallol absorbs  $\text{O}_2$ , quicklime absorbs water vapour and reacts with  $\text{CO}_2$ , leaving out  $\text{N}_2$  and rare gases **ANS B**.
65. D
66. D
67. C
68. A
69. B
70. C
71. Halophytes grow in salty marsh, hydrophytes are aquatic plants, xerophytes grow in deserts while an epiphyte grows upon another plant.  
**Ans. C**
72. Rectum is the final straight portion of the large intestine. **Ans. C**
73. All living things respire to produce energy needed for survival. **Ans. B**
74. Xylem has the principal function of conducting water and minerals from roots to leaves and stem. **Ans. C**
75. C
76. D
77. Chromosome houses the gene that can be transferred from parents to offspring.  
**Ans. C**
78. Gastrin is a peptide hormone that stimulates the secretion of gastric acid  
**Ans. B**
79. The large intestine is not an excretory organ because it does not remove metabolic wastes. **Ans. D**

80. Female anopheles is a vector of malaria, black flies (river blindness) and housefly (cholera). **Ans. C**
81. D
82. Alkaline pyrogallol can be used in absorbing oxygen released during photosynthesis **Ans. D**
83. C
84. C
85. C
86. Viruses cannot be seen with ordinary light microscope with an electron microscope. **Ans. C**
87. Renin coagulates milk protein before it is acted upon by pepsin. **Ans. A**
88. When 1% of osmic acid is added to a small quantity of fat or oil and boiled, a black precipitate will be formed. **Ans. B**
89. C
90. The petals of a flower is usually brightly coloured and as such attract pollinators like insects. **Ans. A**
91. 1hr -----  $360^\circ$   
 $\frac{1}{2}$  hr -----  $180^\circ$   
 $1 \frac{1}{2}$  hr =  $360^\circ + 180^\circ = 540^\circ$  **Ans C**
92. Arranging in ascending order;  
 12,17,25,25,25, 26,26, 26, 29,29,29,  
 29,35,35  
 Median =  $\frac{26 + 26}{2} = 26$  **Ans. B**
93. let the amount be x  
 He sold at 108%  
 $\frac{108x}{100} = 45$  ;  $108x = 4500$   
 $x = 41.67$   
 Now, to make a profit of 32% he should have sold the article at 32 %  
 $\Rightarrow \frac{132}{100} \times 41.67 = \text{N } 55$  **Ans c**
94. Let the total age of 7 pupils be x  
 Then  $\frac{x}{7} = 12$   
 $x = 12 \times 7 = 84$   
 Originally, the total age was  $25 \times 14 = 350$   
 But when the 7 pupils left, 18 pupils were left and the new total age =  $350 - 84 = 266$ .  
 Now, 6 new pupils joined the class with total age  $6 \times 11 = 66$   
 Total no of students =  $18 + 6 = 24$  pupils  
 And total age =  $266 + 66 = 332$   
 New ave. =  $\frac{332}{24} = 13.83$   
 And  $0.83 \times 12 = 10$  months  
 13 yrs , 10 months **Ans. C**

95. Let the girl's pocket money be x,  
 She spends  $\frac{1}{4}x$  on books,  
 $\frac{1}{3}x$  on dresses.  
 $\Rightarrow$  Total of  $\frac{1}{4}x + \frac{1}{3}x = \frac{3x+4x}{12}$   
 $= 7x/12$   
 Remaining fraction =  $1 - 7/12 = 5/12$  **Ans. B**

96.



Using  $n = \frac{360^\circ}{\text{Ext } \angle}$  .  $n = \frac{360}{72} = 5$  sides **Ans. A**

97. Mean  $\bar{x} = \frac{\sum x}{n}$

$$= \bar{x} = \frac{9 + 13 + 16 + 17 + 19 + 23 + 24}{7}$$

$$= 17.29 \quad \text{Ans B}$$

98. Distance,  $d = 800\text{m} = 0.8 \text{ km}$   
 Time,  $t = 20 \text{ min}$

$$= \frac{20}{60} = 0.33 \text{ hr.}$$

But speed =  $d/t$   
 speed =  $0.8/0.33 = 2.4 \text{ km/hr}$  **Ans. A**

99. Volume of cube =  $L^3$ ,  
 The ratio of sides is 2:5  
 = ratio of volumes =  $2^3 : 5^3$   
 = 8:125 **Ans. D**

100. The man bought 220 mangoes at ₦ 5x,  
 sold each for 3x kobo.  
 Total selling price =  $220 \times 3x$   
 $= 660x$  kobo  
 $= \text{N}6.60x$   
 Gain =  $sp - cp$   
 $\Rightarrow 8 = 6.60x - 5x$   
 $8 = 1.6x$   
 $\Rightarrow x = 8/1.6 = 5$  **Ans. B**

NNAMDI AZIKIWE UNIVERSITY, AWKA  
POST-UTME SCREENING EXERCISE, 2010/2011  
FOR

MEDICINE, NATURAL SCIENCES, HEALTH SCIENCES  
AND TECHNOLOGY, BASIC MEDICAL SCIENCES AND  
PHARMACEUTICAL SCIENCES

INSTRUCTIONS

1. SHADE FIRMLY ONLY ONE ANSWER USING HB PENCIL ONLY

2. SHADE YOUR SECOND CHOICE OF COURSE IN THE COLUMN PROVIDED (COLUMN B)

TIME ALLOWED 1 HOUR

From the list of words lettered A To D, choose the word or group of words that is most nearly opposite in meaning to the underlined word.

- There is no doubt that pride is less desirable a quality than \_\_\_\_\_. A. arrogance B. honestly C. efficiency D. humility.
- Few people prefer the rural to the \_\_\_\_\_. A. modern B. urban C. pastoral D. rustic.
- Dan is quite refined in his manners but his colleague is rather \_\_\_\_\_. A. arrogant B. crude C. cultured D. unskilful
- Instead of helping to preserve our culture, the youth engage in activities that \_\_\_\_\_ it. A. denounce B. alter C. conserve D. destroy
- We should regard donations as \_\_\_\_\_ and not compulsory. A. mandatory B. necessary C. voluntary D. obligatory.
- The affluence of the politicians contrasts with the \_\_\_\_\_ of the masses. A. poverty B. paucity C. misery D. suffering
- The importation of rice is permitted while that of wheat is \_\_\_\_\_. A. allowed B. suspended C. inhibited D. prohibited.
- The goal scored in the second half of the match lifted the team from the agony of defeat to the \_\_\_\_\_ of victory. A. hope B. celebration C. ceremony D. ecstasy
- One species of the animal has gone into extinction while the other is still in \_\_\_\_\_. A. antiquity B. oblivion C. existence D. irrelevance.
- The council ratified the controversial recommendation which we thought would be \_\_\_\_\_. A. refuted B. rejected C. authenticated D. corroborated.
- From the words lettered A to D choose the word that best completes each of the following sentences.
  - He was sent to the Remand Home in the hope that the place would \_\_\_\_\_ him.
  - A. amend B. improve C. reform D. remand.
- Since there were no further comments, the chairman called for the \_\_\_\_\_ of the minutes of the last meeting. A. objection B. correction C. resolution D. adoption
- There was a ten-minute \_\_\_\_\_ during the stage-performance of the play. A. interim B. Interplay C. interlude D. intercession.
- The judge restrained the landlord from \_\_\_\_\_ the tenant. A. ejecting B. sacking C. dismissing D. attacking.
- The soldiers pledged their \_\_\_\_\_ loyalty to their commander. A. divided B. unalloyed C. remarkable D. enormous.
- Many children are suffering from \_\_\_\_\_ because of poor feeding. A. meningitis B. maltreatment C. hepatitis D. malnutrition
- The elders advised the priest to confine himself to his \_\_\_\_\_ duties. A. sacrilegious B. pastoral C. angelic D. divine.
- The audience gave the actor a standing \_\_\_\_\_ for his beautiful performance. A. proclamation B. ovation C. clapping D. reward
- If the customer fails to honour his pledge again, his \_\_\_\_\_ will surely be in doubt a. responsibility b. validity c. credulility d. credibility.
- The judge warned that he would not tolerate any interruption of the \_\_\_\_\_ of the court. A. proceeds B. deliberations C. proceedings D. arguments.
- Which of the following physical processes cannot be explained by the molecular theory of matter? A. Evaporation B. Thermal conduction C. Radiation of heat D. Conventional currents in fluids.
- A spring balance, which is suspended from the roof of a lift, carries a mass 1kg at its free end. If the lift accelerates upwards at  $2.5\text{ms}^{-2}$  determine the reading on the spring balance ( $g=10\text{ms}^{-2}$ ). A. 25.0N B. 12.5N C. 7.5N D. 4.0N.
- An object of weight 10N immersed in a liquid displaces a quantity of the liquid. If the liquid displaced weighs 6N, determine the upthrust on the object. A. 20N B. 10N C. 6N D. 4N
- A block weighing 15N rests on a flat surface and a horizontal force of 3N is exerted on it. Determine the frictional force on the block. A. 0.3N B. 0.5N C. 3.0N D. 5.0N
- The apparent weight of a body fully immersed in water is 32N and its weight in

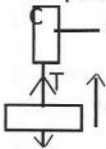
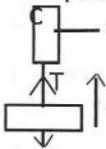
- air is 96N. Calculate the volume of the body (density of water =  $1000\text{kgm}^{-3}$ ,  $g=10\text{ms}^{-2}$ )  
 A.  $8.9 \times 10^{-3}\text{m}^3$  B.  $6.4 \times 10^{-3}\text{m}^3$  C.  $3.2 \times 10^{-3}\text{m}^3$   
 D.  $3.0 \times 10^{-3}\text{m}^3$
26. The resistance of a wire depends on  
 A. The length of the wire B. the diameter of the wire  
 C. the temperature of the wire D. all of the above.
27. Which of the following is a correct explanation of the inertia of a body?  
 A. Reluctance to stop moving  
 B. Ability to overcome the earth's gravity  
 C. Reluctance to start moving and its reluctance to stop moving once it has begun to move  
 D. Readiness to start moving.
28. A device that converts sound energy into electrical energy is  
 A. the horn of a motor car B. an A.C generator  
 C. a microphone D. a loudspeaker.
29. What is the cost of running five 50W lamps and four 100W lamps for 10 hours if electrical energy costs 2 kobo per KWh?  
 A. ₦0.65 B. ₦0.13 C. ₦3.90 D. ₦1.30.
30. Which of the following is NOT a fundamental S.I unit  
 A. Meter B. Kelvin C. Ampere D. Radian.
31. A simple pendulum with a period of 2.0s has its length doubled. Its new period is  
 A. 1.00s  
 B. 28.3s C. 2.83s D. 0.35s
32. Which of the following phenomena cannot be explained by the molecular theory of matter?  
 A. Expansion b. Conduction c. Radiation  
 D. Evaporation
33. In a gas experiment, the pressure of the gas is plotted against the reciprocal of the volume of the gas at a constant temperature, the unit of the slope of the resulting curve is  
 A. Force B. Force/m  
 C. Work D. Energy/m<sup>2</sup>
34. Water shows anomalous behaviour  
 A. Below 0°C B. Between 0°C and 4°C  
 C. At exactly 4°C D. Above 100°C
35. A heavy object is suspended from a string and lowered into water so that it is completely submerged. The object appears lighter because  
 A. The density of water is less than that of the object  
 B. The pressure is low just below the water surface  
 C. It experiences an upthrust  
 D. The tension in the string neutralizes part of the weight.
36. Which of the following is a derived unit?  
 A. Kilogramme B. metre C. Kelvin D. Newton
37. A dentist obtains a linear magnification of 4 of a hole in a tooth by placing a concave mirror at a distance of 2.0cm from the tooth. The radius of curvature of the mirror is  
 A. 5.3cm B. 3.2cm C. 2.8cm D. 1.5cm
38. What is the effect of the increase in the size of the hole of a pin-hole camera on the image?  
 A. Gives a blurred image  
 B. Corrects for chromatic aberration  
 C. Magnifies the image  
 D. Brings the image into a sharper focus.
39. The mechanical advantages of an inclined plane depends on  
 A. Its length B. Its height  
 C. The ratio of its length to its height  
 D. The product of its length and height.
40. A man walks 8km north and then 5km in a direction 60° east of north. Find the distance from his starting point.  
 A. 11.36km B. 13.00km  
 C. 12.36km D. 14.36km.
41. Glucose reduces fehling's solution on warming to  
 A. Copper(I) oxide B. Copper (II) oxide  
 C. Copper (I) chloride D. Copper (II)hydroxide.
42. Pig-iron is brittle because it contains  
 A. a high percentage of carbon as impurity  
 B. calcium trioxosulphate (vi)acid  
 C. Lead (iv) tetraethyl  
 D. sodium hydroxide.
43. Which of the following is normally used for drying ammonia gas?  
 A. Concentrated tetraoxosulphate(vi) acid  
 B. Calcium oxide C. anhydrous calcium chloride  
 D. Phosphorus(v) oxide.
44. The following metals are extracted by the electrolytic method except.  
 A. Potassium B. Calcium C. Tin D. Magnesium.
45. Nuclear reactions can be used in the following except  
 A. Gauging the thickness of objects  
 B. Making atomic bombs  
 C. Curing cancer  
 D. Purifying water.
46. To what temperature must a gas be raised from 273k in order to double both its volume and pressure?  
 A. 298k B. 300k C. 546k D. 1092k
47. Which of the following is not a direct petroleum product?  
 A. Ethanol B. Petrol  
 C. methane D. Vaseline.
48. Compounds that have the same molecular formula but different structures are said to be  
 A. Allotropic B. Isomeric  
 C. Isotropic D. Polymeric.
49. In which of the following crystals are the particles held by Van der Waal's forces only?  
 A. Sodium chloride B. Ice  
 C. Diamond D. Iodine.
50. Hydrogen is used for the following except  
 A. manufacture of ammonia  
 B. synthesis of hydrochloric acid  
 C. extinguishing fire  
 D. manufacture of margarine
51. Under high pressure, real gases do not obey gas



- laws because their molecules A. Have become more energetic B. Have become less energetic c. Have become smaller in size D. Decompose into atoms.
52. Which of the following silver halides is readily soluble in ammonium hydroxide?  
A. AgI B. AgBr C. AgCl D. AgF.
53. Hardening of an oil may be achieved by  
A. boiling The Oil With Water B. Boiling The Oil With a Catalyst. C. Treating The Oil With Hydrogen And a Catalyst D. Distilling The Oil Under Reduced Pressure.
54. Starch can be converted to ethyl alcohol by  
A. Distillation B. Fermentation C. Cracking D. Isomerization.
55. The oxidation state of manganese in potassium permanganate is. A. +5 B. +3 C.+7 D. +2
56. Which of the following substances are all made by the process of polymerization? A. Nylon and soap b. Ethanoic acid, margarine and ethanol c. Nylon and artificial rubber d. Nylon and margarine.
57. Zinc oxide is .A. Basic oxide B. Acidic oxide C. Amphoteric oxide D. Neutral oxide.
58. When sodium chloride and metallic sodium are each dissolved in water A. Both processes are endothermic B. Both processes are exothermic C. The dissolution of metallic sodium is exothermic D. The dissolution of metallic sodium is endothermic
59. The oxidation state of chlorine in potassium chlorate is (A) +1 (B) +2 (C) +3 (D) +5
60. The nucleus of an atom contains A. Protons only B. Neutrons only C. Protons and neutrons D. Neutrons and electrons.
61. Which of the following is not present in the nucleus of a cell? A. Chromosomes B. Nucleolus C. Mitochondrion D. Genes.
62. In aerobic respiration, oxidative phosphorylation takes place in the A. Cytoplasm B. Mitochondria C. Lysosome D. Ribosomes.
63. The ability of organisms to maintain a constant internal environment is known as a. Diuresis b. Endosmosis c. Plasmolysis d. Homeostasis.
64. The bicuspid valve is located between the a. Left auricle and left ventricle b. Aorta and the left ventricle c. Superior vena cava and the inferior vena cava d. Right auricle and right ventricle
65. The pulmonary artery carries A. oxygenated blood from the right ventricle to the lungs B. Deoxygenated blood from the left ventricle to the right auricle C. deoxygenated blood from the right ventricle to the lungs. D. oxygenated blood from the lungs to the right auricle
66. Which of the following organs is responsible for controlling the body temperature regulation and water balance in mammals?  
A. Kidney B. Hypothalamus C. Parathyroid D. Adrenal
67. Deamination is the process during which  
A. Excess amino acid is broken down into ammonia and a keto-acid B. Fats and oils are converted into an emulsion for absorption C. Excess amino acid is converted into proteins D. Excess glucose is converted and stored as glycogen in the liver.
68. Which of the following is not classified as a terrestrial habitat? A forest b. Guinea savannah c. Desert d. Littoral zone.
69. The relationship between a herbivore and the bacteria which live in its caecum is known as a. Parasitism b. Symbiosis c. Commensalisms d. Saprophytism.
70. During blood transfusion, agglutination may occur as a result of the reaction between a. Similar antigens and antibodies b. Contrasting antigens and antibodies c. Two different antigens d. Two different antibodies.
71. The brain and the spinal cord make up the a. Automatic nervous system b. sympathetic nervous system c. central nervous system d. parasympathetic nervous system.
72. Auxins are produced in the a. Petiole of leaves b. Apical regions of roots and shoots c. Epidermis of roots and shoots d. Parenchyma of roots and shoots.
73. The pituitary gland is called the master gland because a. It is located in the brain b. Its secretions are more numerous than those of any other gland c. Its secretion controls other glands d. It regulates muscular movements.
74. The pigment in the malpighian layer responsible for skin colouration is known as a. Haemoglobin b. Melanin c. Haemocyanin d. Haemoerythrin.
75. Which of the following is not an evidence of evolution? A. Fossil b. Anatomy c. Embryology d. Behaviour.
76. Which of the following is not true about gene mutation? It A. Introduces new traits into a population B. Cause changes in the

- DNA C. Always affects the chromosome number  
D. Is a source of new genes
77. Species can be defined as the group of organism that  
A. Resemble each other and live in the same habitat  
b. Are of a common origin and are always found together  
c. Resemble each other and can interbreed freely  
d. Resemble each other and occupy the same niche.
78. The change in colour of the chameleon serves as a means of  
A. Attraction to the opposite sex  
B. Repulsion of the enemy  
C. A camouflage from a predator  
D. Production of a variety of skin pigments.
79. Increasing specialization of structure and function among animals of the same class or order for survival in new and different environments is called  
a. Adaptive radiation  
b. Homology  
c. Phylogeny  
d. Ontogeny.
80. The haploid number of chromosomes in man is  
a. 48  
b. 46  
c. 24  
d. 23
81. A cylinder of base radius 4cm is open at one end, if the ratio of the area of its base to that of its curved surface is 1:4, calculate the height of the cylinder  
a. 1cm  
b. 2cm  
c. 4cm  
d. 8cm
82. A headmaster contributes 7% of his income into a fund and his wife contributes 4% of her income. If the husband earns N 5,500 per annum and the wife earns N 4,000 per annum, find the sum of their annual contribution to the fund  
A. N1,045  
B. N545  
C. N440  
D. N605.
83. A Car is traveling at an average speed of 80km/hr. Its speed in meters per second is  
a. 13.3m/s  
b. 22.2m/s  
c. 222.2m/s  
D. 133.3m/s
84. Which of the following is not a measure of dispersion?  
A. Mode  
b. Range  
c. Mean deviation  
d. Standard deviation
85. Convert 77 to a number in base two  
(A) 111001. B. 1001101. C. 100110. D. 10101
86. What must be added to the expression  $x^2 - 18x$  to make it a perfect square?  
A. 3  
b. 9  
c. 72  
d. 81
87. The area of a parallelogram is  $513\text{cm}^2$  and the height is 19cm. Calculate the base  
a. 13.5cm  
b. 25cm  
c. 27cm  
d. 98cm
88. Calculate the total surface area of a cone of height 12cm and base radius 5cm  
a.  $180\frac{5}{7}\text{cm}^2$   
b.  $240\frac{2}{7}\text{cm}^2$   
c.  $282\frac{6}{7}\text{cm}^2$   
d.  $235\frac{5}{7}\text{cm}^2$
89. The area and a diagonal of a rhombus are  $60\text{cm}^2$  and 12cm, respectively. Calculate the length of the other diagonal.  
A. 5cm  
b. 6cm  
c. 10cm  
d. 12cm
90. The angle of a sector of a circle radius 10.5cm is  $120^\circ$ , find the perimeter of the sector.  
A. 22cm  
b. 33.5cm  
c. 43cm  
d. 66cm
91. The sum of the interior angles of a regular polygon is 30 right angles. How many sides has the polygon?  
A. 34 sides  
b. 30 sides  
c. 17 sides  
d. 15 sides.
92. If the exterior Angles of a quadrilateral are  $y^\circ$ ,  $(2y + 5)^\circ$ ,  $(y + 15)^\circ$  and  $(3y - 10)^\circ$ , find  $y^\circ$   
A. 61.43  
B. 60  
C. 51.43  
D. 50
93. The sum of angles of a regular polygon is  $2520^\circ$ , how many sides does the polygon have?  
a. 20  
b. 18  
c. 15  
d. 16
94. Which of the following is not a property of all parallelograms?  
A. The diagonals bisect each other  
b. The diagonals cut at right angles  
c. The opposite sides are equal  
d. The opposite angles are equal.
95. The length of an exercise book is given as 20cm correct to the nearest centimeter, in which of the following ranges of possible measurements does the actual length lie?  
A. 19.1-20.9cm  
b. 19-21cm  
c. 19.5-20.5cm  
d. 19.9-20.1cm
96. If 3 children share N10.50 among themselves in the ratio 6:7:8 how much is the largest share?  
A. N 3.00  
B. N 4.00  
C. N 3.50  
D. N 5.00
97. By selling some crates of soft drinks for N 600.00 a dealer makes a profit of 50%. How much did the dealer pay for the drinks?  
A. N 400.00  
b. N 450.00  
c. N 200  
d. N 900
98. A hollow sphere has a volume of  $K\text{cm}^3$  and a surface area of  $K\text{cm}^2$ . Calculate the diameter of the sphere  
a. 3cm  
b. 6cm  
c. 9cm  
d. more information is needed.
99. Find the median of the following numbers : 2.64, 2.50, 2.72, 2.91 and 2.35  
a. 2.91  
b. 2.72  
c. 2.64  
d. 2.50
100. A baker used 40% of a 50kg bag of flour. If  $\frac{1}{8}$  of the amount used was for cake, how many kilograms of flour was used for cake?  
A.  $21\frac{1}{2}$   
b.  $61\frac{1}{4}$   
c.  $15\frac{5}{8}$   
d. 17

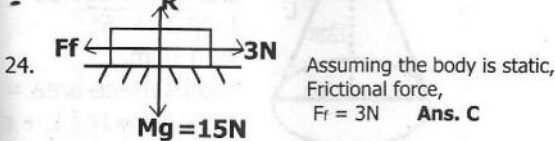
**SOLUTION TO NAU PAST POST-UME QUESTIONS FOR MEDICINE, NATURAL SCIENCES ETC(2010/2011)**

1. D - humility
2. B - urban
3. B - crude
4. D - destroy
5. C - voluntary
6. A - poverty
7. D - prohibited
8. D - ecstasy
9. C - existence
10. B - rejected
11. C - reform
12. D - adoption
13. C - interlude
14. A - ejecting
15. B - unalloyed
16. D - malnutrition
17. D - divine
18. B - ovation
19. D - credibility
20. C - proceedings
21. 
22. 

Spring Balance  
 $T > w$   
 $T - W = ma$   
 $T - mg = ma$   
 $T = ma + mg$   
 $= m(a + g)$   
 $= 1(2.5 + 10)$   
 $= 12.5 \text{ N}$

**ANS B**

23. According to Archimedes principle, upthrust in liquid = loss in wt OR wt of liquid displaced  
 Hence, upthrust = 6N **Ans . C.**



25. Upthrust = weight of water displaced  
 $= 96 - 32 = 64\text{N}$   
 Then mass of water displaced = 6.4kg  
 Volume of water displaced =  
 volume of the body,  $V = \text{mass}/\text{density}$   
 $v = 6.4/1000$   
 $= 6.4 \times 10^{-3} \text{ m}^3$  **Ans. B**

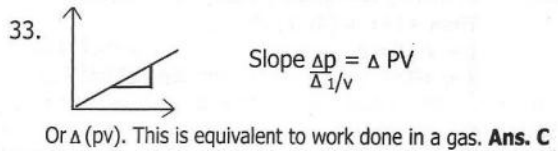
26. Consider the relationship,  $R = \frac{dL}{A}$  **Ans. D**
27. C

28. C- the input in microphone is sound

29.  $\text{Total cost} = 5 \times 50 \times (100/100)$   
 $= 250 + 400 = 650\text{w}$   
 $c = 2\text{k}, t = 10 \text{ hrs.}$   
 Hence. Total cost =  $\frac{650 \times 2 \times 10}{1000}$   
 $= 13 \text{ kobo or N } 0.13$  **ANS B**

30. D
31. Using  $\frac{T_1}{T_2} = \sqrt{\frac{L_1}{L_2}}$   
 $T_1 = 2\text{secs}, L_1 = L; L_2 = 2L \& T_2 = ?$   
 Hence,  $\frac{2}{T_2} = \sqrt{\frac{L}{2L}}$   
 $D/4, T_2 = 2.835$  **ANS C**

32. C



34. B
35. D
36. D
37. Magnification,  $M = v/u; 4 = v/2; v = 8\text{cm}$   
 if a concave mirror produces a magnified image,  
 it means that the image distance is negative.  
 (I.e image is virtual)

$$\frac{1}{v} + \frac{1}{u} = \frac{1}{f}$$

$$-\frac{1}{8} + \frac{1}{2} = \frac{1}{f}$$

$$-\frac{1+4}{8} = \frac{1}{f}$$

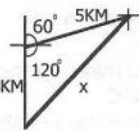
$$\frac{3}{8} = \frac{1}{f}; f = \frac{8}{3} = 2.67\text{cm}$$

hence,  $r = 2f = 2 \times 2.67$   
 $= 5.3\text{cm}$  **ANS A**

38. A
39.  $E = \frac{M.A}{V.R} \times 100\%$

$$M.A = \frac{EX.V.R}{100}$$

But  $V.R = \frac{\text{Length Of Plane}}{\text{Height Of Plane}}$  **Ans. C**

40.   
 using cosine rule  
 $x^2 = 8^2 + 5^2 - 2(5)(8)\text{COS } 120$   
 $x^2 = 64 + 25 + 40$   
 $x^2 = 129$   
 $x = \sqrt{129} = 11.36\text{km}$  **ANS A**

41. Glucose reduces copper II complex in Fehling's solution to copper (I) oxide. **Ans. A**
42. A
43. Calcium oxide is suitable for drying ammonia because it does not react with ammonia.

44.  $T_1 = 273\text{K}, T_2 = 450\text{K}, P_1 = 2\text{p}, v_2 = 2v_1$

$$\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$$

$$\frac{P_1 V_1}{273} = \frac{2P_1 \times 2V_1}{T_2}$$

$$\frac{P_1 V_1}{273} = \frac{4P_1 V_1}{T_2}$$

$$T_2 = 273 \times 4 = 1092\text{K}$$
 **ANS. D**

47. A  
 48. B  
 49. Iodine can sublime because the molecules are held by weak vander waal's forces. **Ans. D**  
 50. Hydrogen supports combustion, hence, it cannot be used to extinguish fire. **Ans. C**  
 51. A  
 52. C  
 53. C  
 54. B  
 55. In  $KMnO_4$ ,  $K = +1$ ,  $O = -2$   
 Then  $+1+x+(4 \times -2)=0$   
 $1+x-8=0$   
 $x = +7$  **Ans c**
56. C  
 57. Zinc oxide dissolves in both acids and alkalis and is therefore said to be amphoteric. **Ans. C**  
 58. C  
 59. The IUPAC name for potassium chlorate is potassium trioxochlorate (v) ( $KClO_3$ )  
 Hence oxidation state = +5 **Ans D**  
 60. C  
 61. Mitochondria are tiny rod-shaped bodies or granules in the cytoplasm. **Ans. C**  
 62. The electron transport chain in the mitochondria is the site of oxidative phosphorylation. **Ans. B**  
 63. D  
 64. Bicuspid valve separates the left auricle from the left ventricle while tricuspid valve separates the right auricle from the right ventricle. **Ans. A**  
 65. All veins except pulmonary vein carry deoxygenated blood while all arteries except pulmonary artery carry oxygenated blood. **Ans. C**  
 66. B  
 67. A  
 68. Littoral zone is always covered with water. This area of the ocean covers the continental shelf. **Ans. D**  
 69. The bacteria help the herbivore to digest cellulose to sugar while the herbivore provide food and shelter for the bacteria **Ans. B**  
 70. C  
 71. The brain and the spinal cord make up the central nervous system. **Ans. C**  
 72. Auxins are produced in the meristem of shoot tips **Ans. B**  
 73. C      74. B      75. D  
 76. It is chromosomal mutation, not gene mutation, that affect the chromosome number. **Ans. C**  
 77. C      78. C      79. A  
 80. The normal number of chromosomes in a gamete is the haploid number. It is 46 (23 pairs) in humans. **Ans. A**  
 81. For a cylinder, area of a curved surface =  $2\pi rh$   
 And area of base =  $\pi r^2$   
 Then  $\frac{\pi r^2}{2\pi rh} = \frac{1}{4}$

$$\frac{r}{2h} = \frac{1}{4}; \quad 2h = 4r$$

$$\frac{r}{2h} = \frac{1}{4}; \quad 2h = 4 \times 4$$

$$h = \frac{16}{2} = 8\text{cm} \quad \text{Ans D}$$

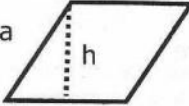
82. Husband;  $\frac{7}{100} \times 5500 = 385$   
 Wife;  $\frac{4}{100} \times 4000 = N160$   
 Total =  $385 + 160 = N 545$  **Ans B**

83. Converting 80km/h to m/s;  
 $\frac{80 \times 1000}{60 \times 60} = 22.2\text{m/s}$  **Ans B**

84. **A** - mode is a measure of central tendency or location.

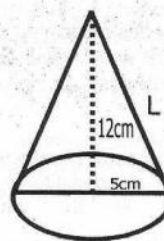
2	77	
2	38 R 1	
2	19 R 0	
2	9 R 1	
2	4 R 1	
2	2 R 0	
2	1 R 0	
2	0 R 1	

↑ = 1001101 **ANS B**

87. a 

area = base x perpendicular height  
 $513 = b \times 19$   
 $b = \frac{513}{19} = 27\text{cm}$  **Ans C**

88. using pythagoras



Using Pythagoras'  
 $L = \sqrt{12^2 + 5^2}$   
 $= 13\text{ cm}$   
 total surface area =  
 $\pi r L + \pi r^2 = \pi r (L + r)$   
 $= \frac{22}{7} \times 5 (13 + 5)$   
 $= \frac{22 \times 5 \times 18}{7} = \frac{1980}{7}$   
 $= 282 \frac{6}{7}$  **Ans.C**

89. For a rhombus,  
 Area = product of diagonals/2  
 $60 = 12 \times 2$   
 $60 = 6x$   
 $x = 10\text{cm}$  **Ans. C**

90. Perimeter of a sector =  
 $2r + \frac{\theta}{360} \times 2\pi r$   
 $= (2 \times 10.5) + \frac{120}{360} \times 2\pi \times 10.5$   
 $= 21 + 22$   
 $= 43\text{ cm}$  **Ans. C**

91.  $(n - 2) \times 180 = \text{sum of interior } < s$   
 $(n-2) \times 180 = 30 \times 90$   
 $n - 2 = \frac{30 \times 90}{180}$   
 $n - 2 = 15$   
 $n = 17 \text{ sides}$       **Ans. C**

92. Sum of ext.  $< S = 360^\circ$   
 $Y + 2y + 5 + y + 15 + 3y - 10 = 360$   
 $7y + 10 = 360$   
 $7y = 350$   
 $Y = 50$       **Ans. D**

93.  $(n - 2) \times 180 = 2520$   
 $n-2 = \frac{2520}{180}$   
 $n - 2 = 14$   
 $n = 16 \text{ sides}$       **Ans. D**

94. B

95. D - since each of 19.9 - 20.1cm can be approximated to give 20 cm

96. Total ratio =  $6 + 7 + 8 = 21$   
Largest share =  $\frac{8}{21} \times 10.5$   
 $= N4$       **Ans. B**

97. Let the cost price be x then 150% of x = 600  
 $\frac{150}{100} x = 600$   
 $X = \frac{600 \times 100}{150}$   
 $X = N400.00$       **Ans. A**

98. For a sphere  
 $\text{Vol} = 4\pi r^3$  and surface area =  $4\pi r^2$ . But they are equal  
Here;  $4\pi r^3 = 4\pi r^2$   
 $r = 1 : r = 3\text{cm}$   
 $r = 3$   
Now, diameter = 6cm      **Ans. B**

99. Arranging in ascending order  
2.35, 2.50 {2.64}, 2.72, 2.91      **Ans. C.**

100. 40% of 50kg = 20kg  
Then, 1/8 of 20kg = 2.5kg (used for cake)  
**Ans. A**

**NNAMDI AZIKIWE UNIVERSITY, AWKA**

**POST-UTME SCREENING EXERCISE, 2011/2012**

For

**Medicine, Basic Medical Sciences, Health Sciences and Technology, Pharmaceutical Sciences, Engineering, Biosciences, Physical Sciences, Environmental Sciences, Agriculture.**

**INSTRUCTION:**

1. Shade **FIRMLY** only one answer using HB pencil
2. You are allowed to make a second choice of course into the following: Faculty of Agriculture, Geophysics, Anatomy, Science Education, Federal College of Education (Technical) Umunze, Enugu State College of Education (Technical). (See the back of the **OMR** sheet for details)
3. Shade your second choice of course in the column provided (**Column 8**)

**Time allowed: 1 hour**

**Date: 6<sup>th</sup> August, 2011**

Fill in the blank in the following sentences making use of the best of the options.

1. The project which seemed very near realized .....because of lack of funds.  
A. fell over B. fell through C. fell off D. fell in E. fell down.
2. The members of the panel were.....  
A. discussing about it B. discussing on it C. discussing upon it D. discussing it E. discussing around it.
3. It is time we.....  
A. should be going B. ought to go C. are going D. went E. go.

4. The way to stop some frivolous publication is to .....the press  
A. gag B. shackle C. fetter D. handcuff E. blind

5. Without.....words he accused him directly of treachery.  
A. amending B. modifying C. mixing D. mincing E. meaning

Choose the word or phrase closest in meaning to the underlined word.

6. Most times my classmate tells cock and bull stories  
A. costly B. unreasonable C. clever D. untrue E. funny

7. Never in the history of human conflict has so much been owed by so many to so few.  
A. Many people owed much money at the end of the war.  
B. A handful of people saved the lives of a nation  
C. A few people did a lot of things gratis.  
D. This conflict caused the largest ransom ever demanded  
E. Very little was owed by anyone to anybody.

8. The ingenious scheme of the robber broke down because of the efficiency of the police officer. Ingenious

here means

- A. suspicious B. ambitious C. deceitful D. clever E. stupid

9. Be careful we are approaching the crossroads.

- A. Look up B. watch out C. look out D. hold up E. look in

10. He took exception to Njoku's remark.

- A. was delighted B. was excited by C. got demoralized by D. objected to E. was perplexed by.

Choose the option opposite in meaning to the word(s) or phrase underlined.

11. For millions of years, the world's resources have remained boundless.

- A. unlimited B. scarce C. indomitable D. limited E. available

12. The president took exception to the ignoble role the young man played in the matter.

- A. honourable B. embarrassing C. dishonourable D. extraordinary E. dishonest

13. He accepted a mundane task without hesitation.

- A. great B. lowly C. menial D. moderate E. ordinary

14. In a sentence, there must always be concord between a subject and its verb.

- A. breach B. departure C. disagreement D. dispute E. alliance

15. The lecturer was merely obfuscating the issue with his endless examples.

- A. complicating B. clarifying C. confusing D. summarizing E. boring

Fill each gap with the most appropriate option from the list following the gap

16. My shoes are worn out; I must see my.....

- A. grocer B. tanner C. cobbler D. hosier E. shoe-maker

17. .... [A. A 90-years old B. A 90-year old C. A 90 year-old

- D. 90-year old E. 90-years old] woman was attacked by a group of bandits.

18. She has been here..... [A. since B. for C. from D. in E. during] the past three weeks.

19. Before mechanization, workers ..... [A. wring B. wrung C. wrang

- D. wringed E. wrong] water out of fabrics with their hands.

20. Three quarters of the physics class.....[A.

- improve B. improves C. are improving D. is improving E. is improved] dramatically.

21. Eze is contemptuous ..... [A. to B. at C. for D. of E. from] dishonest people.

22. The plaintiff ..... [A. asked B. begged C. demanded of D. prayed

- E. forced] the court to restrain the defendants from further action.

23. Ngozi is prepared for a ..... [A. show-off B. show-down C. show-out

- D. show-up E. show -up] with his opponent following his defeat last season.

24. The President rejected the bill and withheld his.....[a. accent B. assent

- C. access D. ascent E. assess]

25. The dark continent was an.....[a. abuse B. enigma C. eclectic D. epithet

- E. impression] for Africa.

Choose the best of the options from the Questions below.

26. Which of the following metals cannot replace hydrogen from water or steam?A. Sodium B. Magnesium C. Iron D. Calcium E. Copper.

27. Which of the following changes is physical?

- A. Adding iron filings to aerated water  
B. Adding sodium metal to water  
C. Cooling a solution of iron (II) sulphate to obtain the hydrated salt.  
D. Cooling water to obtain ice  
E. Burning the domestic gas for cooking

28. 0.1 Faraday of electricity was passed through a solution of copper (II) sulphate. The maximum weight of copper deposited on the cathode would be (Cu=64)  
A. 64.0g B. 32.0g C.16.0g D.6.4g E. 3.2g

29. Bronze is an alloy of

- A. copper, zinc and nickel B. aluminum and copper C. copper and zinc  
D. tin and zinc E. tin and copper

30. Starch can be converted to ethyl alcohol by

- A. distillation B. fermentation C. isomerization D. cracking E. cooking

31. Pick out the correct statement

- A. Zinc heated to redness reacts with steam to give oxygen and zinc oxide  
B. Zinc heated to redness reacts with steam to give oxygen and hydrogen  
C. Zinc does not react with hot or cold water  
D. Zinc reacts with hot water to form zinc oxide and hydrogen  
E. Zinc reacts very easily with cold water to give zinc oxide and hydrogen.

32. Chlorine, bromine and iodine resemble each other in

that all

- A. dissolve in alkalis B. reacts violently with hydrogen without heating  
 C. displace each other from solutions of their salts D. are gases  
 E. are liquids

33. When air is compressed

- A. its density decreases B. it solidifies C. its temperature decreases  
 D. Its temperature increases E. its temperature remains unchanged.

34. Which of the following is formed when maltose reacts with concentrated tetraoxosulphate (VI) acid?

- A. Carbon (IV) oxide B. Coal tar C. Charcoal D. Toxic fumes E. None of the above.

35. A property of a colloidal dispersion which a solution does not have is

- A. the Tyndall effect B. homogeneity C. osmotic pressure D. surface polarity E. all of the above

36. Dr. Nnamdi Azikiwe was born in

- A. 1909 B. 1900 C. 1904 D. 1901 E. 1902

37. One of the following was a female Governor in Nigeria.

- A. Prof. Dora Akunyili B. Dame Patience Goodluck  
 C. Hon. Uche Ekwunife D. Dame Vergy Etiaba E. Chief (Mrs) Serah Jubril

38. The 2010 soccer world-cup competition took place in  
 A. Germany B. Brazil C. Colombia D. USA E. South Africa.

39. The first Nigerian Vice-Chancellor was?

- A. Prof. Eni Njoku B. Prof. Takenna Tamuno C. Prof. Ade-Ajayi  
 D. Prof. Kenneth Dike E. Prof. Adeoye Lambo

40. The capital of Lagos State is

- A. Surulere B. Victoria Island C. Ikeja D. Oshodi E. Ikorodu

41. If X is positive, for what range of X is  $4 + 3X < 10$ ?

- A.  $0 < X < 2$  B.  $X < X$  C.  $1 < X < 2$  D.  $0 < X < 43/4$   
 E.  $0 > X > 2$

42. A house bought for #100, 000 was later auctioned for #80, 000. Find the loss percent.

- A. 20% B. 30% C. 40% D. 50% E. 60%

43. If  $2x + y = 7$  and  $3x - 2y = 3$ , by how much is 7x greater than 10?

- A. 1 B. 3 C. 7 D. 10 E. 17

44. Find the number whose logarithm to base 10 is 2.6025.

- A. 400.4 B. 0.4004 C. 0.04004 D. 0.004004 E. 0.0004004

45. Simplify:  $3/4 \div 11/4 \times (11/2 - 2/3)$

- A.  $\frac{7}{30}$  B.  $\frac{7}{24}$  C.  $\frac{9}{25}$  D.  $\frac{1}{2}$  E.  $\frac{18}{25}$

46. A stick of length 1.7m was measured by a boy as 1.80m. Find the percentage error in his measurement.

- A.  $2\frac{2}{9}\%$  B.  $\frac{26}{7}\%$  C. 5% D.  $27\frac{2}{9}\%$  E.  $28\frac{4}{7}\%$

47. Simplify  $\log_3 9 + \log_3 15 - \log_3 5$ .

- A.  $\log_3 19$  B.  $\log_3 3$  C. 3 D. 1 E. 0

48. A trader makes a loss of 15% when selling an article. Find the ratio, selling price: cost price.

- A. 3:20 B. 3:17 C. 17:20 D. 20:23 E. 3:23.

49. If N varies directly as M and  $N=8$  when  $M=20$ , find M when  $N=7$ .

- A. 13 B. 15 C.  $17\frac{1}{2}$  D.  $18\frac{1}{2}$  E.  $19\frac{1}{2}$

50. Solve for T in the equation  $\frac{3}{4}t + \frac{1}{3}(21 - t) = 11$

- A.  $\frac{9}{13}$  B.  $3\frac{9}{13}$  C. 5 D.  $9\frac{3}{5}$  E.  $5\frac{9}{13}$

**SOLUTION 2011 / 2012**

**NAU POST-UTME SCREENING PAST QUESTIONS FOR MEDICINE, BASIC MEDICAL SCIENCES, HEALTH SCIENCES AND TECHNOLOGY, PHARMACEUTICAL SCIENCE, ENGINEERING, BIOSCIENCES, PHYSICAL SCIENCES, ENVIRONMENTAL SCIENCE, AGRICULTURE.**

1. B - fell through
2. D - discussing it
3. D - went
4. B - shackle
5. D - mincing
6. B - unreasonable
7. C - a few people did a lot of things gratis
8. D - clever
9. B - watch out
10. D - objected to
11. A - limited
12. A - honourable
13. A - great
14. C - disagreement
15. B - clarifying
16. C - cobbler
17. B - A 90-year old
18. We use 'for' when we are specific with time. **Ans. B**
19. "Wrung" is the past tense and past participle of "wring". **Ans. B**
20. D - is improving
21. B - at
22. D - prayed
23. B - show down
24. B - assent
25. D - epithet
26. Metals lower than hydrogen in the electrochemical series cannot replace it. **Ans. E**
27. D
28. 2 Faraday deposits 64g of copper  
0.1 Faraday deposits X  
Cross multiplying,  $2x = 0.1 \times 64$   
 $X = \frac{0.1 \times 64}{2}$   
 $= 3.2g$  **Ans. E**
29. D 30. B
31. Zinc reacts with steam at red heat to give zinc oxide and hydrogen. **Ans. D**
32. C
33. According to pressure law, increase in pressure (compression) results to increase in temperature. **Ans. D**
34. Carbohydrates are dehydrated using conc. H<sub>2</sub>SO<sub>4</sub> to form a black residue of carbon. **Ans. C**
35. Colloidal or false dispersion can scatter light rays (Tyndall effect) unlike true solutions. **Ans. A**
36. Dr. Nnamdi Azikiwe was born on November 16 1904. **Ans. C**
37. D
38. 2010 soccer world-cup took place in South Africa and was won by Spain. **Ans. E**
39. D 40. C
41. Solving  $4+3x < 10$   
 $3x < 10-4$   
 $3x < 6$   
 $X < 2$ . All negative nos are also less than 2, but we need the positive nos. (Zero and above). **Ans. A**
42. %Loss =  $\frac{C.P - S.P}{C.P} \times 100\%$   
 $= \frac{100,000 - 80,000}{100,000} \times 100\%$   
 $= \frac{20,000}{100,000} \times 100\%$   
 $= 20\%$ . **Ans. A**
43. We just need x here, so let's eliminate y,  
 $2x + y = 7$  --- ①  
 $3x - 2y = 3$  --- ②  
Equa. ① x 2:  $4x + 2y = 14$  --- ③  
Adding equations ② & ③  
 $7x = 17$   
 $X = \frac{17}{7}$   
Then,  $7x = 7 \left(\frac{17}{7}\right) = 17$   
And  $17 - 10 = 7$  **Ans. C**
44. 2.6025, starting with 2 indicates that the no. Must have 3 digits before decimal point, if any. **Ans.**

45.  $\frac{3}{4} \div \frac{11}{4} \times \left(1\frac{1}{2} - \frac{2}{3}\right)$

The bracket first;

$$\frac{3}{2} - \frac{2}{3} = \frac{9-4}{6} = \frac{5}{6}$$

Now, we have,  $\frac{3}{4} \div \frac{11}{4} \times \frac{5}{6}$   
 $= \frac{3}{4} \times \frac{4}{11} \times \frac{5}{6}$

$$= \frac{1}{2} \quad \text{Ans. D}$$

46. % error =  $\frac{1.8 - 1.7}{1.7} \times 100\%$

$$= \frac{0.1}{1.7} \times 100\%$$

$$= \frac{1}{17} \times 100\%$$

$$= 5\frac{15}{17} \%$$

47. As a single logarithm, we have  $\text{Log}_3(9 \times 15)$   
 $= \text{Log}_3 27$

$$= \text{Log}_3 3^3$$

$$= 3 \text{Log}_3 3$$

$$= 3 \quad \text{Ans. C.}$$

48. The cost price = 100%

Selling price = 85% (15% loss)

Selling price = 85/100

Cost price

$$= \frac{17}{20} \text{ i.e. } 17:20 \quad \text{Ans. C.}$$

49. N = KM

$$8 = \frac{20K}{5}$$

$$K = \frac{8}{20} = \frac{2}{5}$$

Now, we have  $N = \frac{2}{5}M$

When  $N = 7$

$$7 = \frac{2}{5}M$$

$$2M = 35$$

$$M = \frac{35}{2} = 17\frac{1}{2} \quad \text{Ans. C.}$$

50.  $\frac{3}{4}t + \frac{1}{3}(21 - t) = 11$

Multiplying by 12 (L.C.M. Of 3 and 4)

$$9t + 4(21 - t) = 132$$

$$9t + 84 - 4t = 132$$

$$9t - 4t = 132 - 84$$

$$5t = 48$$

$$t = \frac{48}{5}$$

$$= 9\frac{3}{5} \quad \text{Ans. D}$$



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