

# BUK POST UTME PAST QUESTIONS AND ANSWERS [FACULTY OF SCIENCES]

## 2013/2014 POST UTME SCREENING EXERCISE

**ALL PROGRAMMES in: Faculty of Agriculture; College of Health sciences; Faculty of Chemistry/Industrial Chemistry; Education/Chemistry; Biochemistry; Biological Sciences (Applied Biology, Botany, Microbiology, Zoology); and Education/Biology.**

**Time Allowed:** 90 Minutes

### INSTRUCTIONS:

- I. Candidates are required to answer all questions
- II. Candidates are to shade their correct options boldly using **HB** pencil, on the answer sheet provided.

### SECTION I: BIOLOGY 2013 QUESTIONS

1. Birds which swim in water have\_\_\_\_\_
  - A. Webbed feet
  - B. Long beaks
  - C. Toes with claws
  - D. Broad claws
2. Which of the following is not a plant hormone?
  - A. Cytokinin
  - B. Ethylene
  - C. Gibberellin
  - D. Insulin.
3. Which of the following cell constituents is not common in both plants and animals?
  - A. Mitochondria
  - B. Chloroplast
  - C. Ribosomes
  - D. Golgi apparatus
4. Which of the following is responsible for converting milk into curd?
  - A. Virus
  - B. Yeast
  - C. Fungi
  - D. Bacteria
5. Beri-Beri is cause by the lack of vitamin\_\_\_\_?
  - A. B1
  - B. A
  - C. D
  - D. C
6. Which of the following is not a constituent of blood plasma?
  - A. Proteins
  - B. Mineral salts
  - C. Water
  - D. Platelets
7. Which of the following diseases is not caused by bacteria?
  - A. Leprosy
  - B. Chicken pox
  - C. Tuberculosis
  - D. Typhoid fever
8. Which of the following characteristic is not possessed by most plats?
  - A. Respire
  - B. Move away from stimuli
  - C. Reproduce
  - D. Adapt to environment
9. Plant wilt due to excess of \_\_\_\_\_
  - A. Transpiration
  - B. Photosynthesis
  - C. Absorption
  - D. None of these
10. Normal human adult man has \_\_\_\_\_
  - A. 10gram of haemoglobin /100gramof blood
  - B. 14gram of haemoglobin/100gramof blood
  - C. 18gram of haemoglobin/100gramof blood
  - D. 24gram of haemoglobin/100gramblood
11. Plants developing in dry conditions are\_\_\_\_\_
  - A. Xerophytes
  - B. Mesophytes
  - C. Lithophytes
  - D. Hydrophytes
12. Fleshy fruits with stony endocarp are called\_\_\_\_\_

- A. Berries
- B. Pomes
- C. Drupes
- D. Capsules

13. A flower which can be divide into two equal halves by only one plane is \_\_\_\_\_

- A. Zygomorphic
- B. Actinomorphic
- C. Regular
- D. Perfect

14. Which of the following indicate that euglena is a plant?

- A. Conspicuous eye spot
- B. Presence of gullet
- C. Limited movement
- D. Present of starch grains.

15. Ordinary table salt is sodium chloride what is baking soda?

- A. Potassium chloride
- B. Potassium carbonate
- C. Potassium hydroxide
- D. Sodium bicarbonate

16. Plants receive their nutrients mainly from?

- A. Chlorophyll
- B. Atmosphere
- C. Light
- D. Soil

17. One of the following is not a function of bones \_\_\_\_\_

- A. Place for muscle attachment
- B. Protection of vital organs
- C. Secretion of hormones for calcium regulation in blood and bones
- D. Production of corpuses

18. In which part of plat does photosynthesis generally takes place?

- A. Leaf and other chlorophyll bearing parts
- B. Steam and leaf
- C. Roots and chlorophyll bearing parts
- D. Bark and leaf

19. The oxygen release during photosynthesis is obtained from

- A. From the catalytic splitting of  $\text{CO}_2$  in plant tissues
- B. From the breaking down of glucose to maltose in cells
- C. During the photolysis of water using energy trapped in chlorophyll

D. By the excretion of excess oxygen in plant tissue

20. Pollination is best defined as?

- A. Transfer of pollen from anther to stigma
- B. Germination of pollen grains
- C. Growth pollen tube to ovule
- D. Visiting flowers by insects

21. The possession of breathing roots is a characteristic of plant growing in \_\_\_\_\_

- A. Mangrove swamp
- B. Costal savannah
- C. Guinea savannah
- D. Shrub biome

22. Which of the following animals has both exoskeletal and endo skeletal structure?

- A. Tortoise
- B. Frog
- C. Jelly fish
- D. Fresh water mussel

23. Fertilization occurs in \_\_\_\_\_

- A. Uterus
- B. Vagina
- C. Ureter
- D. Fallopian tube

24. The edible part of mushroom is called \_\_\_\_\_

- A. Basidiocarp
- B. Primary mycelium
- C. Fungal hyphae
- D. Basidiospores

## Section II: Chemistry Questions

25. The nucleus of an atom consist of \_\_\_\_\_

- A. Electrons and neutrons
- B. Electrons and protons
- C. Protons and neutrons
- D. All of the above

26. The number of moles of solute present in 1kg of a solvent is called its \_\_\_\_\_

- A. Molality
- B. Molarity
- C. Normality
- D. Formality

27. The most electronegative element among the following is?

- A. Sodium
- B. Bromine

- C. Fluorine  
D. Oxygen

28. The metal used to recover copper from a solution of copper sulphate is

- A. Na  
B. Ag  
C. Hg  
D. Fe

29. The oldest rocks in the earth's crust were once molten and came from deep inside the earth. The molten rock called magma, spewed out in volcanic eruptions during the earth's early and solidified into hard rock is called \_\_\_\_\_

- A. Granite  
B. Basalt  
C. Igneous rock  
D. Sedimentary rocks

30. The law which states that the amount of gas dissolve in a liquid is proportional to its partial pressure is \_\_\_\_\_

- A. Dalton's law  
B. Gay Lussac's law  
C. Hanry's law  
D. Raolt's law

31. Which of the following compounds is readily dissolved in water?

- A. CuO  
B. AgCl  
C. Na<sub>2</sub>SO<sub>4</sub>  
D. CaCO<sub>3</sub>

32. Which of the buffer system of the human blood is

- A. H<sub>2</sub>CO<sub>3</sub><sup>-</sup>HCO<sub>3</sub><sup>-</sup>  
B. H<sub>2</sub>CO<sub>3</sub><sup>-</sup>CO<sub>3</sub><sup>-</sup>  
C. CH<sub>3</sub>COOH-CH<sub>3</sub>COO<sup>-</sup>  
D. NH<sub>2</sub>CONH<sub>2</sub><sup>-</sup> NH<sub>2</sub>CONH<sub>2</sub><sup>+</sup>

33. The gas present in the stratosphere which filters out some of the sun's ultraviolet light and provides an effective shield against radiation damage to living things is \_\_\_\_\_

- A. Helium  
B. Ozone  
C. Oxygen  
D. Methane

34. The most commonly used bleaching agent is \_\_\_\_\_

- A. Alcohol

- B. Carbon dioxide  
C. Chlorine  
D. Sodium chloride

35. The nucleus of a hydrogen atom consist of

- A. 1 Proton only  
B. 1 Proton +2 neutron  
C. 1 Proton only  
D. Electron only

36. The gas giving off when NH<sub>4</sub>Cl is heated with an alkali is \_\_\_\_\_

- A. N<sub>2</sub>  
B. Cl<sub>2</sub>  
C. H<sub>2</sub>  
D. NH<sub>3</sub>

37. The heat required to raise the temperature of body by 1 k is called?

- A. Specific heat  
B. Thermal capacity  
C. Water equivalent  
D. None of the above

38. The nuclear particles which are assumed to hold the nucleus together are

- A. Electrons  
B. Positrons  
C. Neutrons  
D. Mesons

39. The metal that is used as a catalyst in the hydrogenation of oil is \_\_\_\_\_

- A. Ni  
B. Pb  
C. Cu  
D. Pt

40. The Latin word Formica means ant. The name formic acid is drive from the Latin word because \_\_\_\_\_

- A. This acid, in ancient times, was used to eliminate anthills  
B. This corrosive acid is secreted by ants to drive away their enemies.  
C. This acid was first obtained by the distillation of ants.  
D. Ant are attracted by the odour of this acid

41. The inherited traits of an organisms are controlled by

- A. RNA molecules  
B. Nucleus  
C. DNA molecules

D. Enzymes

42. What is the number of moles of  $\text{CO}_2$  which contains 16g of oxygen?

- A. 0.5 mole
- B. 0.2 mole
- C. 0.4 mole
- D. 0.25 mole

43. The single acid which dissolved gold is \_\_\_\_\_

- A. Nitric acid
- B. Hydrochloric acid
- C. Aqua regia
- D. Selenic

44. Which of the following is used as laughing gas

- A. Nitrogen oxide
- B. Nitrogen dioxide
- C. Nitrogen trioxide
- D. Nitrogen tetra oxide

45. One of characteristic of transition metals is \_\_\_\_\_

- A. Ability to conduct electricity
- B. Formation of coloured ions
- C. Reducing ability
- D. Ductility

46. An alkene can be converted to alkane by \_\_\_\_\_

- A. Halogenation
- B. Hydrogenation
- C. Dehydration
- D. Hydrolysis

47. Which of the following pollutant is biodegradable?

- A. DDT
- B. Plastics
- C. Sewage
- D. Lead compound

48. Brass is an alloy copper and \_\_\_\_\_

- A. Zinc
- B. Tin
- C. Iron
- D. Chromium

49. How many carbon atoms are there in benzene ring?

- A. 3
- B. 6
- C. 9
- D. 12

### Section III: Physics Questions

50. Light year is a unit of \_\_\_\_\_

- A. Time
- B. Distance
- C. Light
- D. Intensity of light

51. Mirage is due to \_\_\_\_\_

- A. Unequal heating of different parts of the atmosphere
- B. Magnetic disturbances in the atmosphere
- C. Depletion of ozone layer in the atmosphere
- D. equal heating of different parts of the atmosphere

52. Pa (pascal) is the SI unit of \_\_\_\_\_

- A. Thrust
- B. Pressure
- C. Frequency
- D. Conductivity

53. Metals are good conductors of electricity because

- A. They contain free electron
- B. The atoms are lightly parked
- C. They have high melting point
- D. All of the above

54. The resistance of a piece of wire of 20m length and cross-sectional area  $8 \times 10^{-6} \text{m}^2$  is \_\_\_\_\_

- A.  $1.0 \Omega$
- B.  $10.0 \Omega$
- C.  $0.5 \Omega$
- D.  $5.0 \Omega$

55. If two bodies of different masses, initially at rest are acted upon by the same force for the same time, then both bodies acquire the same.

- A. Velocity
- B. Momentum
- C. Acceleration
- D. Kinetic energy

56. Which of the following is a scalar quantity?

- A. Force
- B. Pressure
- C. Velocity
- D. Acceleration

57. Rectifiers are used to convert \_\_\_\_\_

- A. Direct current to alternating current
- B. Alternating current to direct current
- C. High voltage to low voltage
- D. Low voltage to high voltage

58. A force of 200N acts between two objects at a certain distance apart. The value of the force when the distance is halved is \_\_\_\_\_

- A. 100N
- B. 200N
- C. 400N
- D. 800N

59. Inside of an aeroplane, flying at a high altitude \_\_\_\_\_

- A. The pressure is the same as that outside
- B. Normal atmospheric pressure is maintained by the use of air pumps
- C. The pressure inside is less than the pressure outside
- D. Normal humidity and partial vacuum are maintained.

60. One thousand microns is equal to \_\_\_\_\_

- A.  $10^{-3}\text{m}$
- B.  $10^{-6}\text{m}$
- C.  $10^{-9}\text{m}$
- D.  $10^{-12}\text{m}$

61. Sound travels at the fastest speed in \_\_\_\_\_

- A. Vacuum
- B. Air
- C. Water
- D. Steel

62. The correct unit of energy density is \_\_\_\_\_

- A.  $\text{Kgm}^{-3}\text{S}^{-2}$
- B.  $\text{Kgm}^{-1}\text{S}^{-2}$
- C.  $\text{Kgm}^3\text{S}^{-2}$
- D.  $\text{Kgm}^2\text{S}^{-2}$

63. Superconductors are substances which \_\_\_\_\_

- A. Conduct electricity at low temperature
- B. Offer high resistance to the flow of current
- C. Offer no resistance to the flow of current
- D. Conduct electricity at high temperature

64. An object placed 10cm from a concave mirror of focal length 5cm would have its image \_\_\_\_\_

- A. At infinity

- B. 10cm from the focus
- C. At the radius of curvature
- D. At the centre of curvature

65. Which of the following radiation has the highest frequency?

- A. Infra-red rays
- B. Radio waves
- C. Light waves
- D. X-rays

66. When a ray of light is incident normally on an air-glass interface, its angle of refraction is \_\_\_\_\_

- A.  $60^\circ$
- B.  $30^\circ$
- C.  $150^\circ$
- D.  $0^\circ$

67. Which gas is filled in refrigeration?

- A. Acetylene
- B. Chlorofluorocarbon
- C. Methane
- D. Carbon monoxide

68. The efficiency of air-conditioning machine is measured in \_\_\_\_\_

- A. Tonnes
- B. CPO
- C. Percentage
- D. Temperature

69. When a bar of magnet is cut into two equal halves, the pole strength of each piece \_\_\_\_\_

- A. Becomes zero
- B. Becomes half
- C. Remain the same
- D. Becomes double

70. Which of the following object is used to view distance objects?

- A. Barometer
- B. Binoculars
- C. Microscope
- D. Stethoscope

72. The sky appears blue due to which property of light?

- A. Scattering
- B. Refraction
- C. Diffraction
- D. Reflection

73. At what angle to the horizontal must the nozzle of a machine be kept

when firing to obtain a maximum horizontal range for the bullets?

- A. 0.00
- B. 22.50
- C. 30.00
- D. 45.00

#### Section IV: English language

**In each of questions 74 to 79, choose the option that best complete the gap(s)**

74. You must ensure the correctness of the information before \_\_\_\_\_ to conclusion

- A. Drawing
- B. Enabling
- C. Learning
- D. Jumping
- E. Examining

75. The rocket \_\_\_\_\_ the target and did not cause any casualty

- A. Sensed
- B. Reached
- C. Missed
- D. Exploded
- E. Aimed

76. It is desirable to take \_\_\_\_\_ in any business if you want to make profile

- A. Advice
- B. Risk
- C. Loan
- D. Perseverance
- E. Recourse

77. They waste all the money on the purchase of some \_\_\_\_\_ items.

- A. Excellent
- B. Important
- C. Significant
- D. Quality
- E. Trivial

78. When he found the wallet his face was glowed but soon it faded as wallet was \_\_\_\_\_

- A. Empty
- B. Vacant
- C. Recovered
- D. Stolen
- E. Expensive

**Instructions for Q. 79-Q. 85;** which of the phrases ( A ) ( B ) ( C ) and ( D ) given

below each sentence should replace the phrases printed in bold type to make the sentence grammatically correct. If the sentence is correct as it is, mark (E) i.e. No correction required as the answer.

79. The meeting is **attempted to mend** the strained relations between the management and the employees.

- A. Was attempted for mending
- B. Is an attempt to mend
- C. Is attempted at mending of
- D. Will be attempted by mending
- E. No correction required

80. Hafeez arrived at the hotel, **which a reception was** held in his honour.

- A. In which a reception is
- B. While a reception being
- C. Where a reception was
- D. Since a reception going on
- E. No correction required

81. Since his college days, Rolihlahla has been **standing up with** the rights of weak and the oppressed

- A. Stood up along with
- B. Standing in for
- C. For standing beside
- D. Standing up for
- E. No correction required

82. **Unless a man** with plenty of money can afford a house in this locality

- A. Until a man has
- B. When a man possesses
- C. Except a man of
- D. Only a man with
- E. No correction required

83. They lost the vote because they could not **express clearly**.

- A. Express themselves clearly
- B. Express each other clearly
- C. Clearly express
- D. Be clearly expressed
- E. No correction required

84. Gambo must be punished for acting in **opposite** to my wishes

- A. Opposing to
- B. In opposite with
- C. Opposite against
- D. In opposition to
- E. No correction required

85. Nigeria is a diverse and breath-taking country with many places **worthwhile to see**

- A. Worth sight
- B. Worth seeing
- C. Worthwhile scene
- D. Worthy seeing
- E. No correction required

### Reading passage for questions 86-90

The earth's crust averages 16 miles thick and rests on what is called the mantle. This layer, about 750 miles thick is believed to be semi-viscous or plastic nature rather than solid. Thus, both continental and oceanic areas could be said to float on the mantle, with continental areas pushing deeper into the mantle than do oceanic areas where the crust is thinner.

Constant erosion moves dirt and rock into ocean areas where they settle. These areas gradually sink deeper into the mantle. Eventually creating pressure that thrusts new land up forming surrounding areas. Mountains formed by this process are made of sedimentary rock and are called folded or domes.

Earthquakes occur where the crust shifts or cracks apart sharply under pressure; the resulting breaks or fissures are called fault mountains created by these faults fault blocks. On weak spots on the earth's crust—generally near sea coasts—gases and molten rock under tremendous pressure break through to form conical shaped mountains. These we know as volcanoes.

No sooner are new mountains and flat lands created by pressure than water, ice, and wind begin to wear them away thus creating new valleys, river courses and coastlines.

86. The first paragraph is mainly about earth's \_\_\_\_\_

- A. Continents
- B. Crust
- C. Mantle
- D. Oceans

87. The writer uses the word-float to describe the way \_\_\_\_\_

- A. Dirt and rocks erode into the sea

- B. Land and water areas rest on the mantle
- C. The mantle rests on the earth's core
- D. Water areas drift onto the mainland

88. The mantle is \_\_\_\_\_

- A. Pliable substance under the crust
- B. A solid layer of the earth's crust
- C. A thin layer of earth under the ocean
- D. The semi-solid exterior of the earth

89. The second paragraph states that eroded materials create pressure in ocean areas, causing the formation of \_\_\_\_\_

- A. Continental areas
- B. Dome mountains
- C. Fault blocks
- D. Fissures reefs

90. Folded mountains consist of \_\_\_\_\_

- A. Broad fissures
- B. Molten rock
- C. Plastic material
- D. Sedimentary rock

**In each of the following sentences, there is one word or group of words underlined and gap. From the list of word or group of words lettered A to D choose the one that is most nearly opposite in meaning to the underlined word or group of words and that will, at the same time, correctly fill the gap in the sentence.**

91. My uncle is a prosperous business man; my aunt, unfortunately is quite \_\_\_\_\_

- A. Unskilful
- B. Dishonest
- C. Expulsion
- D. Obstructions

92. The university has a large yearly intake; very few \_\_\_\_\_ take place

- A. Turnouts
- B. Rejection
- C. Expulsion
- D. Obstructions

93. Rather than make derogatory remarks about host, a guest should make \_\_\_\_\_ ones.

- A. Polite
- B. Complementary
- C. Interesting
- D. Honest

94. Our mechanized services contrast sharply with the \_\_\_\_\_ operation we had before.

- A. Electrical
- B. Controlled
- C. Original
- D. Manual

95. After ade had listened to some advice, his rigid ideas became more \_\_\_\_\_

- A. Friendly
- B. Compromising
- C. Flexible
- D. Democratic

**From the words lettered A to D In each of the following sentences, choose the word or group of words that is nearest in meaning to the underlined word or group of words as it is used in the sentence.**

96. The marathon is a gruelling race.

- A. Powerful
- B. Exhausting
- C. Interesting
- D. Distant

97. The works of art in this gallery are invaluable

- A. Irreplaceable
- B. Precious
- C. Priceless
- D. Durable

98. The detective was confused when the clues pointed to several suspects.

- A. Excited
- B. Worried
- C. Discouraged
- D. Perplexed

99. My father was sceptical about the story I told him.

- A. Ignorant
- B. Doubtful
- C. Embraced
- D. Lukewarm

### **BIOLOGY ANSWERS:**

1. D 2. D 3. B 4. D 5. D 6. D 7. B 8. B 9. A  
10. B 11. A 12. C 13. B 14. D 15. A 16. C  
17. C 18. A 19. A 20. A 21. D 22. D 23. D  
24. A

### **CHEMISTRY ANSWERS:**

25. C 26. B 27. C 28. D 29. C 30. A 31. C  
32. D 33. B 34. D 35. B 36. D 37. D 38. -  
39. A 40. A 41. C 42. A 43. C 44. A 45. D  
46. B 47. C 48. B 49. B

### **PHYSICS ANSWERS:**

50. B 51. A 52. B 53. A 54. NIL 55. A 56. B  
57. B 58. D 59. B 60. A 61. B 62. - 63. A  
64. D 65. D 66. D 67. B 68. C 69. C  
70. B 71. White 72. A 73. D

### **ENGLISH ANSWERS:**

74. D 75. B 76. B 77. E 78. A 79. E 80. C  
81. D 82. D 83. A 84. D 85. B 86. C 87. B  
88. A 89. B 90. D 91. C 92. B 93. A 94. D  
95. B 96. B 97. C 98. B 99. B

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## 2014/2015 POST UTME SCREENING EXERCISE

### SECTION I: BIOLOGY

1. The main difference between gram-positive and gram-negative bacteria is \_\_\_\_\_

- A. Cell membrane
- B. Cell wall
- C. Ribosome
- D. Mitochondria

2. Lactase hydrolyses lactose to \_\_\_\_\_

- A. Glucose
- B. Glucose and galactose
- C. Fructose
- D. Glucose and fructose

3. When oxygen supply to the tissue is inadequate, the condition is \_\_\_\_\_

- A. Dyspnoea
- B. Hypoxia
- C. Asphyxia
- D. Apnoea

4. Who wrote the famous book "Origin of species"?

- A. Lamarck
- B. Darwin
- C. De Vries
- D. Mendel

5. A flower which can be divide into two equal halves by only one plane is \_\_\_\_\_

- A. Zygomorphic
- B. Actinomorphic
- C. Regular
- D. Perfect

6. Acid rain is caused by \_\_\_\_\_

- A. NO<sub>2</sub>
- B. SO<sub>2</sub>
- C. SO<sub>3</sub>
- D. CO<sub>2</sub>

7. A plant cell become turgid due to \_\_\_\_\_

- A. Plasmolysis
- B. Exosmosis
- C. Endosmosis
- D. Electrolysis

8. Which function will be lost due to damage of occipital lobe?

- A. Hearing
- B. Speech
- C. Vision

D. Memory

9. Which of the following human cell do not contain mitochondria?

- A. Nerve cell
- B. Red blood cell
- C. Liver cell
- D. cell white blood cell

10. A female anopheles can be recognized by \_\_\_\_\_

- A. Proboscis and palpi long and more or less of equal length
- B. Proboscis long and palpi short
- C. Proboscis short and palpi long
- D. Both Proboscis and palpi are short

11. Pyramid of energy in ecosystem is \_\_\_\_\_

- A. Always upright
- B. Always inverted
- C. Mostly upright
- D. Mostly inverted

12. Which of the following is mainly responsible for greenhouse effect?

- A. SO<sub>2</sub>
- B. CO<sub>2</sub>
- C. CO
- D. O<sub>2</sub>

13. Which state of malarial parasite is infective to man?

- A. Gametocyte
- B. Merozoite
- C. crypto-Merozoite
- D. sporozoite

14. Plants that grow in saline water are called \_\_\_\_\_

- A. halophytes
- B. hydrophytes
- C. mesophytes
- D. thallophytes

15. One of the following is not a function of bones

- A. Place fore muscle attachment
- B. Protection of vital organs
- C. Secretion of hormone for calcium regulation blood and bones
- D. Production of blood corpuscles

16. Photosynthesis take place faster in

- A. Yellow light  
B. White light  
C. Red light  
D. Darkness
17. Ordinary table salt is sodium chloride, what is baking soda?  
A. Potassium chloride  
B. Potassium carbonate  
C. Potassium hydroxide  
D. Sodium bicarbonate
18. Ozone hole refers to\_\_\_\_\_  
A. Decrease in the ozone layer in troposphere  
B. Decrease in thickness of ozone layer in troposphere  
C. Decrease in the thickness of ozone layer in stratosphere  
D. Increase in the thickness of ozone layer in troposphere
19. Pollination is best defined as\_\_\_\_\_  
A. Transfer of pollen from anther to stigma  
B. Germination of pollen grains  
C. Growth of pollen tube in ovule  
D. Visiting flowers by insects
20. Plants receive their nutrients mainly from\_\_\_\_\_  
A. Chlorophyll  
B. Atmosphere  
C. Light  
D. Soil
21. Most of our important crop plants come from \_\_\_\_\_family of plant  
A. Grass  
B. Orchid  
C. Rose  
D. Bromeliad
22. Which of the following is multicellular?  
A. Euglena  
B. Amoeba  
C. Spirogyra  
D. Chlamydomonas
23. Which of the following is used in measuring atmospheric pressure?  
A. Barometer  
B. Hydrometer  
C. Hygrometer  
D. Thermometer

24. An example of poikilothermic organism is\_\_\_\_\_  
A. Bird  
B. Lizard  
C. Cockroach  
D. Rabbit

25. The soil with the water retaining capacity is\_\_\_\_\_  
A. Loamy soil  
B. Clay soil  
C. Sandy soil  
D. Stoney soil

## SECTION II: CHEMISTRY

26. The presence of an impurity in a substance will cause the melting point to\_\_\_\_\_  
A. Increase  
B. Be stable  
C. Be zero  
D. Reduce
27. How many unpaired electrons are there in orbitals of fluorine atom?  
A. 1  
B. 2  
C. 3  
D. 0
28. 10.0 dm<sup>3</sup> of water added to 2.0 mol dm<sup>-3</sup> of HCl, what is the final concentration in mol dm<sup>-3</sup>?  
A. 2.0  
B. 0.5  
C. 0.4  
D. 8.0
29. Which of the following is not a characteristic of a spontaneous reaction?  
A. Not be spontaneous  
B. Be at equilibrium  
C. Be indeterminate  
D. Be spontaneous
30. In an endothermic reaction, if there is a loss of heat, the reaction will\_\_\_\_\_  
A. Not be spontaneous  
B. Be at equilibrium  
C. Be indeterminate  
D. Be spontaneous
31. Which of the following is employed as an anaesthetic?  
A. NH<sub>3</sub>  
B. NO  
C. N<sub>2</sub>O  
D. NO<sub>2</sub>

32. 2-methylbutane-2-ol is an example of

a \_\_\_\_\_

- A. Secondary alkanol
- B. Tertiary alkanol
- C. Dihydric alkanol
- D. Primary alkanol

33. The compound that will react with sodium hydroxide to form salt and water only is \_\_\_\_\_

- A.  $\text{CH}_3\text{CH}=\text{CH}_2$
- B.  $\text{CH}_3\text{CH}_2\text{COOH}$
- C.  $\text{C}_6\text{H}_{12}\text{O}_6$
- D.  $(\text{CH}_3)_3\text{COH}$

34. The decarboxylation of ethanoic acid will produce carbon (iv) and \_\_\_\_\_

- A. Propane
- B. Butane
- C. Methane
- D. Ethane

35. An example of oxidation reduction enzyme is \_\_\_\_\_

- A. Amylase
- B. Protease
- C. Lipase
- D. Dehydrogenase

36. The saponification of an alkanoate to produce soap and alkanol involves \_\_\_\_\_

- A. Dehydration
- B. Esterification
- C. Hydrolysis
- D. Oxidation

37. An isotope has atomic number of 15 and a mass number of 31. The number of protons it contains is \_\_\_\_\_

- A. 31
- B. 15
- C. 16
- D. 46

38. The hardness of water is mainly due to the presence of \_\_\_\_\_

- A. Calcium chloride or sodium chloride
- B. Calcium hydroxide or magnesium hydroxide
- C. Calcium trioxocarbonate (iv) or calcium tetraoxosulphate (v)
- D. Sodium hydroxide or magnesium hydroxide

39. Which of these is used to hasten the ripening of fruits?

- A. Ethyne
- B. Ethane
- C. Ethanol
- D. Ethene

40. The gasification of coke is used in the manufacture of \_\_\_\_\_

- A. Producer gas
- B. Natural gas
- C. Synthetic gas
- D. Industrial gas

41. Polyvinyl chloride is used in the production of \_\_\_\_\_

- A. Pipes
- B. Glass
- C. Alloy
- D. Ceramics

42. The rate of reaction usually decrease with a decrease in a concentration of reactant because \_\_\_\_\_

- A. Kinetic energy decreases
- B. Temperature increases
- C. Speed increases
- D. Reactant collision decreases

43. Which of the following is a physical change?

- A. Freezing ice cream
- B. Dissolving calcium in water
- C. Burning kerosene
- D. Exposing white phosphorus to air

44. Which of the following metals is purified commercially by electrolysis?

- A. Zn
- B. Fe
- C. Sn
- D. Cu

45. The gas that is most useful in protecting humans against solar radiations is \_\_\_\_\_

- A. Chlorine
- B. Ozone
- C. Carbon (iv) oxide
- D. Hydrogen sulphide

46. The type of iron that is best suited for welding, making nails, chains and iron rods is \_\_\_\_\_

- A. Pig iron
- B. Wrought iron
- C. Cast iron
- D. Iron pyrites

47. Which of the following gases is commonly found in the atmosphere?

- A. Argon
- B. xenon
- C. Neon
- D. Helium

48. Which of the following is alkali?

- A. NaOH
- B.  $\text{NH}_3$
- C.  $\text{Mg}(\text{OH})_3$
- D.  $\text{Ca}(\text{OH})_2$

49. Which of the following metal is the least reactive?

- A. Pv
- B. Sn
- C. Hb
- D. Au

50. Which of the following is an example of a chemical change?

- A. Dissolution of salt in water
- B. Rusting of iron
- C. Melting of ice
- D. Separating mixtures by distillation

### SECTION III: PSYISCS

51. A rope is attached to a block that has a weight of 120N. When the rope exerts an upward force of N on the block, what is the net force on the block?

- A. 130 N up
- B. 370 N up
- C. 130 N up
- D. 370 N up

52. A satellite in a circular orbit around Earth with constant speed but not a constant velocity. Which of the following statements best explains why the satellite's velocity is not constant?

- A. The radius of the satellite's orbit is not larger
- B. The force on the satellite's mass is constantly decreasing
- C. The magnitude of the satellite's momentum is large
- D. The direction of the satellite's motion is constantly changing

53. Which of the following statements describe an electric generator?

- A. A magnet is rotated through a coil of wire to produce an electric current
- B. Electric potential in a rotating coil of wire on a permanent magnet.
- C. An electrical current causes a coil of wire in a magnetic field
- D. Forces from a permanent magnet allow a coil wire to rotate

54. A neutral balloon is rubbed with a piece of cloth. As a result, the balloon has a negative charge. Which of the following best explains why the balloon has a negative charge?

- A. The balloon is a conductor
- B. The balloon is an insulator
- C. The balloon transfers charges to the cloth
- D. The balloon receives charges from the cloth

55. What is the magnitude of the momentum of a 0.50kg ball moving in a straight line at 5.0 m/s?

- A. 0.1kg m/s
- B. 2.5kg m/s
- C. 6.3kg m/s
- D. 10kg m/s

56. The human ear is most sensitive to sound that has a frequency of about 4000Hz. Assume that the speed of sound in air is 350 m/s. What is the wavelength of a sound heard in the air with this frequency?

- A. 0.043 m
- B. 0.085 m
- C. 12 m
- D. 340 m

57. A light bulb with a potential difference of 120V across it carries a current of 4.0A. Which of the following is the power consumption of the light bulb?

- A. 0.013 W
- B. 80 W
- C. 120 W
- D. 180 W

58. An electric fan has a power output of 60W. How much work has it done if it operates for 20s?

- A. 0.5 J
- B. 60 J
- C. 120 J
- D. 72000 J

59. During a thunderstorm, which of the following travel at a speed closest to  $3.00 \times 10^8$  m/s

- A. Wind from the storm
- B. Sound from the thunder
- C. Light from the lightning
- D. Rain from the storm clouds

60. An athlete is training for a race by performing timed trials of sprints up a staircase. Which set of varieties most directly affect the athlete's power?

- A. Bode weight, height climbed, width of steps
- B. Body weight, time spent climbing, width of steps
- C. height climbed, time spent climbing, Bode weight
- D. height climbed, time spent climbing, width of steps

61. an appliance draws 4Amps of current when connected to 120V. what is the resistance of the appliance?

- A. 0.03V
- B. 30V
- C. 124V
- D. 480V

62. Which of the following statements best explains how heat flows by conduction?

- A. A large mass of air begins to move faster.
- B. Energy is transferred by electromagnetic waves
- C. Energy is transferred from molecule to molecule
- D. Large mass of warm air rises, replacing the cooler above.

63. A person starts driving and travels 3km east to a store. The person then turns around and travels 1 km west to another store. Finally, the person travels 2km west, back to the starting point. What distance has this person travelled?

- A. 0 km
- B. 3 km
- C. 5 km
- D. 6 km

64. A 2m long pendulum swings back and front 6 times in 17s. what is the period of the pendulum?

- A. 0.5 s
- B. 2.5 s

- C. 12 s
- D. 34 s

65. Which of the following always occurs when a light ray reflects off a mirror? A. The speed of the light ray increases

B. The direction of the light ray stays the same.

C. The frequency of the light ray decreases as it replace and loses energy to the mirror.

D. The angle which the light ray strikes the mirror equal the angle at which it reflects.

66. Two positively charged objects are separated by a large distance. One of the positively charged object is replaced by a negatively charged object, and the two objects are move closer to each other. Which of the following occurs in this situation?

- A. The attractive force become a repulsive force, which increases as the objects move closer to each other.
- B. The repulsive force become an attractive force, which increases as the objects move closer to each other.
- C. The attractive force become a repulsive force, which decreases as the objects move closer to each other.
- D. The repulsive force become an attractive force, which decreases as the objects move closer to each other.

67. Which of the following has the greatest momentum?

- A. 0.2kg ball moving at 40m/s
- B. 500kg car travelling at 16m/s
- C. 2000kg truck travelling at 9m/s
- D. 50kg child skateboarding at 4 m/s

68. What method of heat transfer allows the sun's heat energy to reach earth through the vacuum of space?

- A. Condensation
- B. Conduction
- C. Convection
- D. Radiation

69. A current of 2A passes through an 8V load. What is the potential difference between the load?

- A. 0.25 V
- B. 4.0 V
- C. 10 V
- D. 19 V

70. A man standing 300m away from a wall sounds a whistle, the echo from the wall reaches him 1.8s later. Calculate the velocity of sound in air.

- A. 540.0 ms<sup>-1</sup>
- B. 333.3 ms<sup>-1</sup>
- C. 270.0 ms<sup>-1</sup>
- D. 166.7 ms<sup>-1</sup>
- E. 83.3 ms<sup>-1</sup>

71. Which of the following radiation has the highest frequency?

- A. Radio waves
- B. Light waves
- C. X-rays
- D. Infra-red rays

72. Which of the following is used for controlling the amount of light entering the eye?

- A. Cornea
- B. Pupil
- C. Iris
- D. Optic nerve

73. Which of the following statement is correct about cathode rays? They are faster moving\_\_\_\_\_

- A. Atoms
- B. Ions
- C. Neutron
- D. Protons

74. An image which cannot be formed on a screen is to be\_\_\_\_\_

- A. Inverted
- B. Real
- C. Virtual
- D. Erect

75. Which of the following is usually used to cause fission in an atomic reaction? A.

- Alpha particles
- B. Beta particles
- C. Electrons
- D. Neutrons

#### SECTION IV: ENGLISH LANGUAGE

**In the following passage, the numbered gaps indicate missing words. Against each number in the list below the passage, four choices are offered in columns lettered A to D. for each question, choose the word that is**

**most suitable to fill the numbered gap in the passage.**

#### PASSAGE

Locusts have from time to time been the cause of terrible \_\_\_76\_\_\_ of farms. \_\_\_77\_\_\_ of locusts can, in a few hours strip vast areas of green and fertile country of all signs of \_\_\_78\_\_\_. They are \_\_\_79\_\_\_ or periodic \_\_\_80\_\_\_ after a heavy \_\_\_81\_\_\_ of an area, they may not appear for ten years or fourteen years. Now that more is known of the way of life of locusts, these periodic \_\_\_82\_\_\_ are better understood and consequently more \_\_\_83\_\_\_ scientist know the regions in which the gregarious phases of locusts may occur and can even sometimes \_\_\_84\_\_\_ when an \_\_\_85\_\_\_ can take place.

76. A. Deprivation  
B. Infection  
C. Disease  
D. Devastation

77. A. Swarms  
B. Herds  
C. Colonies  
D. Flock

78. A. Pasture  
B. Life  
C. Vegetation  
D. Weed

79. A. Perennial  
B. Casual  
C. Temporary  
D. Seasonal

80. A. Parasites  
B. Pests  
C. Predators  
D. Vermin

81. A. Encounter  
B. Invasion  
C. Adventure  
D. Downpour

82. A. Attack  
B. Ambushes  
C. Escapades  
D. Combats

83. A. Curable  
B. Protective  
C. Controllable  
D. Preventable

84. A. Propose  
B. Declare  
C. Suggest  
D. Predict

85. A. Eruption  
B. Outburst  
C. Incursion  
D. Outbreak

**From the word lettered A to D below each of the following sentences, choose a word or group of words that is nearest in meaning to the underlined expression as it is used in the sentence (86-88).**

86. Death is unavoidable for every human being.  
A. Inevitable  
B. Essential  
C. Necessary  
D. Immoral

87. The suspect was made to walk in front of the curious crowd  
A. Surprised  
B. Astonish  
C. Engrossed  
D. Anxious

88. The monk lived an austere life in order to discipline himself  
A. Holy  
B. Religious  
C. An ascetic  
D. A prayerfully

**From the word lettered A to D below each of the following sentences, choose the one that best explain the underlined as it is used in the sentence (89-95).**

89. There are times when you must decide and take the bull by the horns  
A. Make the right decision  
B. Make a bold decision  
C. Make the wrong decision  
D. Make a final decision

90. He leads a dog's life really because his freedom is always curtailed.  
A. Never knows what to do  
B. Never goes out  
C. Sometimes does something wrong  
D. Never does what he want

91. No one ever mentions him because he is regarded as the black sheep of the family  
A. The one with a sense of humour  
B. The one who is always late  
C. The one with a bad reputation  
D. The one who never wishes

92. I shouldn't go outside without raincoat because it is raining cats and dogs  
A. It is just started to rain  
B. It raining heavily  
C. It going to rain  
D. It is raining a little

93. It is lovely house and big but, no body uses it so it's a bit of a white elephant  
A. Something very beautiful and useful  
B. Something very cheap and useless  
C. Something very big and useful  
D. Something very expensive and useless

94. When the business folded, he took the lion's share  
A. The simplest part  
B. The smallest part  
C. The biggest part  
D. The only part

95. Without my glasses I can't see where I'm going in fact, I'm as blind as bat  
A. Very short sighted  
B. Very long sighted  
C. Very far sighted  
D. Very clear sighted

**Questions 96-100, choose the correct option that best complete the sentence.**

96. Can you hear what he is \_\_\_\_\_?  
A. Saying  
B. Speaking  
C. Telling  
D. Talking

97. She hasn't come \_\_\_\_\_  
A. Still  
B. Already

- C. Yet
- D. Till

98. I \_\_\_\_\_ TV yesterday evening.

- A. Views
- B. Looked
- C. viewed
- D. Watched

99. She look \_\_\_\_\_ a famous film star

- A. As
- B. Like
- C. Similar
- D. Same

100. I only \_\_\_\_\_ one mistake in last night's test.

- A. Made
- B. Done
- C. Did
- D. Makes

#### **BIOLGY ANSWERS:**

1. C 2. B 3. A 4. A 5. B 6. B 7. C 8. A 9. B

10. 11. A 12. C 13. D 14. C 15. C 16. B

17. B 18. C 19. A 20. D 21. A 22. C

23. C 24. B 25. A

#### **CHEMISTRY ANSWERS:**

26. D 27. C 28. A 29. - 30. B 31. C 32. A

33. D 34. C 35. D 36. B 37. B 38. B 39. D

40. A 41. A 42. B 43. A 44. D 45. B 46. B

47. D 48. B 49. C 50. B

#### **PHYSICS ANSWERS:**

51. D 52. D 53. A 54. D 55. B 56. B 57. D

58. D 59. C 60. C 61. A 62. C 63. C 63. A

64. B 65. D 66. A 67. C 68. D 69. - 70. B

71. A

#### **ENGLISH ANSWERS:**

89. D 90. A 91. C 92. B 93. D 94. C

95. A 96. B 97. C 98. D 99. B 100. A

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## 2015/2016 POST UTME SCREENING EXERCISE

### SECTION I: BIOLOGY

1. Amoeba obtain its oxygen requirements \_\_\_\_\_
  - A. From oxidising food substance
  - B. From air trapped in vacuoles
  - C. Through diffuse of air into its body
  - D. Through an air cavity in the ectoplasm
  
2. The hydra has two layers of cell called \_\_\_\_\_
  - A. Ectodermis
  - B. Ectodermic endoderm
  - C. Ectodermic and dermis
  - D. Epidermis and dermis
  
3. Which of the following organisms has a largest surface area to volume ratio?
  - A. Man
  - B. Earthworm
  - C. Amoeba
  - D. Grasshopper
  
4. In which of the following organisms are ammonia excreted as a waste product?
  - A. Man
  - B. Bird
  - C. Amoeba
  - D. Grasshopper
  
5. Which of the of the following plants parts does not perform supportive function?
  - A. Parenchyma, xylem, and collenchyma
  - B. Epidermis, xylem, and sclerenchyma
  - C. Parenchyma, collenchymas, and sclerenchyma
  - D. Sclerenchyma, xylem, and collenchymas
  
6. Which of the following indicate that euglena is a plant?
  - A. Conspicuous 'eye' spot
  - B. Presence of gullet
  - C. Limited movement
  - D. Presence of starch grains
  
7. Which of the is not a constituent of blood plasma?
  - A. Proteins
  - B. Mineral salt
  - C. Water
  - D. Platelets
  
8. Which part of the gill of fish is involved in gaseous exchange?
  - A. Gill slit
  - B. Gill bars
  - C. Gill covers
  - D. Gill filament
  
9. Which of the following is not a product of fermentation of glucose?
  - A. Energy
  - B. Alcohol
  - C. Lactic acid
  - D. CO<sub>2</sub>
  
10. Which of the following process occurs when the body temperature of a mammal rises above normal?
  - I. The arterioles in the skin dilate
  - II. Sweat production is reduced
  - III. The erector muscle contract
  - A. I only
  - B. II only
  - C. I and III only
  - D. II and III only
  
11. The following are method of measuring plant growth except \_\_\_\_\_
  - A. Determining the fresh and dry weight of plant
  - B. Counting the number of fruits produced
  - C. Measuring the increase in height of the shoot
  - D. Measuring the length and breadth of a leaf
  
12. The oxygen released during photosynthesis is obtained
  - A. From the catalytic splitting of CO<sub>2</sub> in plant tissues
  - B. From the breakdown of molecules in cells
  - C. During the photolysis of water using energy trapped in chlorophyll
  - D. By the excretion of excess oxygen in plant tissues
  
13. Which of the following organs in human organs is responsible for the removal of excess water?
  - A. The spleen
  - B. The kidney
  - C. Large intestine
  - D. Small intestine

14. If the cerebellum of a person is damaged, which of the following will be impaired?

- A. Vision
- B. Walking
- C. Breathing
- D. Digestion

15. In flowering plant, fertilization will occur when \_\_\_\_\_

- A. The pollen grow downwards penetrating the style
- B. A pollen grain is transferred to stigma
- C. One of the nuclei inside the pollen tube fuses with the ovum
- D. The nucleus of the pollen tube divides

16. The possession of breathing roots is a characteristic of plants growing in \_\_\_\_\_

- A. Mangrove swamp
- B. Coastal savannah
- C. Guinea savannah
- D. Shrub biome

17. Measles in infants can be prevented by \_\_\_\_\_

- A. Sleeping under mosquito net
- B. Providing clean water supply
- C. Taking anti-malaria tablets
- D. Vaccinating young children

18. Wildlife conservation can be enhanced by \_\_\_\_\_

- A. Enacting laws to encourage poaching
- B. Discouraging elimination of endangered species
- C. Encouraging creation of satellite hunting unit
- D. Suppressing the activities of wildlife conservation agencies

19. When a food substance give a purple colour on the addition of sodium hydroxide and a drop of copper sulphate, then the food substance is likely to contain \_\_\_\_\_

- A. Carbohydrates
- B. Fat
- C. Protein
- D. Sugar

20. In any food chain, first member must be a \_\_\_\_\_

- A. Carnivore
- B. Herbivore
- C. Zooplankton

D. Autotroph

21. A urine sample of a patient, tested with Benedict's/Fehlings's solution, gave an orange colour precipitate, indicating the presence of \_\_\_\_\_

- A. Glucose
- B. Sucrose
- C. Lactose
- D. Maltose

22. Which of the following structures occupies the neural canal of the vertebral column of a vertebra?

- A. Cerebellum
- B. Hypothalamus
- C. Medullar oblongata
- D. Spinal cord

23. Which two structures are presence in palisade cell but not in a liver cell?

- A. Cell wall and cytoplasm
- B. Cell wall and chloroplast
- C. Cell membrane and cytoplasm
- D. Cell membrane and chloroplast

24. Which following characteristic is not possessed by most plants? Ability to \_\_\_\_\_

- A. Move away from stimuli
- B. Respire
- C. Produce
- D. Adapt to environment

25. How many conjugal are involved in sexual reproduction of paramecium?

- A. 1
- B. 2
- C. 4
- D. 8

## SECTION II: CHEMISTRY

26. Which of the following compound is not a raw material for the manufacture of plastic?

- A. Ethyne
- B. Ethane
- C. Monochloro-ethene
- D. Propene
- E. butadiene

27. which of the following statement is not correct about esterification?

- A. It is a slow reaction
- B. The process is reversible

- C. It similar to hydrolysis  
 D. It is catalysed by acid  
 E. The product usually have fruity smell

28. The phenomenon observed when dust particles collide randomly in a beam of sun light is known as \_\_\_\_\_

- A. Tyndale effect  
 B. Diffusion  
 C. Osmosis  
 D. Brownian movement  
 E. Dialysis

29. The mass number of an atom of an element is sum of its \_\_\_\_\_

- A. Electron, neutron and proton  
 B. Electrons and proton  
 C. Protons and neutrons  
 D. Orbital electrons  
 E. Valence electrons

30. How many unpaired electrons are there in an atom of an element with the following electronic configuration  $1S^22S^22P^2$

- A. 0  
 B. 1  
 C. 2  
 D. 6  
 E. 8

31. An increase in the pressure of a gas results in decrease in its \_\_\_\_\_

- A. Mass  
 B. Vapor  
 C. Density  
 D. Temperature  
 E. Concentration

32. Which of the following is a general method of preparing acid?

- A. Direct combination of constituent elements  
 B. Double decomposition involving a salt solution  
 C. Reaction between a hydride and water  
 D. Reaction between a base and an amphoteric oxide  
 E. Dissolution of hydroxide followed by neutralization

33. The loss of molecules of water crystallization to the atmosphere by some crystalline is known as \_\_\_\_\_

- A. Efflorescence  
 B. Effervescence  
 C. Phosphorescence

- D. Florescence  
 E. Deliquescence

34. Which of the following is alkanol?

- A.  $CH_3(CH_2)_2OH$   
 B.  $CH_3CH=CHCH_2OH$   
 C.  $CH_3(CH_2)_3OH$   
 D.  $CH_3CH(OH)CH_3$   
 E.  $C(CH_3)_3OH$

35. Which of the following is the relative molecular mass of a compound which has empirical formula  $CH_2O$ ?

(H=1, C=12, O=16).

- A. 42  
 B. 45  
 C. 126  
 D. 145  
 E. 180

36. Which of the following is used as water softener?

- A.  $Na_2CO_3 \cdot 10H_2O$   
 B.  $CuSO_4$   
 C.  $MgSO_4 \cdot 7H_2O$   
 D.  $CaCl_2 \cdot 2H_2O$   
 E.  $Na_2SO_4 \cdot 10H_2O$

37. What is the percentage by weight of calcium by  $Ca(OCl)_2$ ?

(Ca=40, Cl=35.5, O=16)

- A. 28%  
 B. 31.6%  
 C. 43.8%  
 D. 44.5%  
 E. 90.3%

38. Which of the following gases is lighter than air?

- A. HCL  
 B.  $CO_2$   
 C.  $SO_2$   
 D.  $NH_3$   
 E. All of the above

39. What is the value  $-14^\circ C$  on the kelvin temperature scale?

- A.  $295^\circ K$   
 B.  $278^\circ K$   
 C.  $259^\circ K$   
 D. 278K  
 E. 259K

40. Lead and tin are the components of \_\_\_\_\_

- A. Steel

- B. Bronze
- C. Brass
- D. Dentists amalgam
- E. Soft solder

41. Which of the following gases is colourless, odourless and soluble in potassium hydroxide solution.

- A. NO<sub>2</sub>
- B. SO<sub>2</sub>
- C. NH<sub>3</sub>
- D. CO<sub>3</sub>
- E. SO

42. If a solution has a pH of 2, it can be concluded that it

- A. Is a weak electrolyte
- B. Has hydrogen ion concentration of 0.2 mol dm<sup>-3</sup>
- C. Is as twice as acidic as a solution of pH 1
- D. Will produce effervescence with magnesium ribbon
- E. Is neutral

43. A finely divided form of a metal burns more readily in air than the rod form because the rod has \_\_\_\_\_

- A. Higher molar mass
- B. Smaller surface area
- C. Protective oxide coating
- D. Different chemical properties
- E. Same chemical properties

44. In which of the following is the oxidation number of sulphur equal to -2?

- A. S<sub>8</sub>
- B. H<sub>2</sub>S
- C. SO<sub>2</sub>
- D. SO<sub>3</sub>
- E. SO<sub>4</sub>

45. How many orbitals associate with the P-sub energy level?

- A. 2
- B. 3
- C. 5
- D. 6
- E. 1

46. One of the characteristics of transition metal is \_\_\_\_\_

- A. Reducing ability
- B. Ductility
- C. Ability to conduct electricity
- D. Formation of coloured ion

47. Which of the following statement is not used to detect radioactivity?

- A. Wilson cloud chamber
- B. Geiger-muller counter
- C. Mass spectrometer
- D. Photographic plate

48. The condensation of several amino acids molecules gives \_\_\_\_\_

- A. Long chain alkanolic acids
- B. Secondary alkanols
- C. Alkanoates
- D. Proteins

49. What is the mass number of an element if its atom contains 10 protons, 10 electrons and 12 neutrons?

50. Equilibrium is said to be attained in 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. Rate of information of the product decreases with time

### SECTION III: ENGLISH LANGUAGE

**In the following passage, the numbered gaps indicate missing words. Against each number in the list below the passage, four choices are offered in columns lettered A to D. for each question, choose the word that is most suitable to fill the numbered gap in the passage.**

#### PASSAGE

My country is considered to be an industrialized nation. Out of 25million \_\_51\_\_ only about a million are employed in \_\_52\_\_. A very large portion of its surface consists of \_\_53\_\_ areas. The rest of the land is used for the \_\_54\_\_ of food. In the north there is wide open land to which owner of \_\_55\_\_ have grazing right.

- 51. A. citizens
- B. Towns men
- C. Occupants
- D. squatters

52. A. harvesting  
B. Agriculture  
C. gardening  
D. Ranching

53. A. Urban  
B. City  
C. Rural  
D. cultivated

54. A. manufacture  
B. output  
C. production  
D. Distribution

55. A. Hatcheries  
B. poultry  
C. Tractors  
D. Livestock

**Questions 56-60, choose the correct option that best complete the sentence.**

56. The celebration were rounded \_\_\_\_\_ with a novelty match.  
A. Off  
B. Up  
C. Down  
D. Out

57. The earthquake that struck Sacramento \_\_\_\_\_ the city  
A. Confused  
B. Devastated  
C. Demarcated  
D. Troubled

58. After his defeat in the war, the general \_\_\_\_\_ his army and went into retirement.  
A. Fired  
B. Retired  
C. Disbanded  
D. Executed

59. The officers pledge their \_\_\_\_\_ loyalty to the new government.  
A. Indefatigable  
B. Complete  
C. Questionable  
D. Unalloyed

60. Cosmetics are sometimes use to cover the \_\_\_\_\_ of nature.

- A. Difficulties  
B. Deficits  
C. Defects  
D. Defaults

**In each of the following sentences, there is one word or group of word underlined and one gap. From the list of word or group of words lettered A to D, choose the one that is most nearly opposite in meaning to the underlined word or group of words and that will, at the same time, correctly fill the gap in the sentence.**

61. My uncle is a prosperous business man; my aunt, unfortunately, is quite \_\_\_\_\_.  
A. Unskilful  
B. Dishonest  
C. Unsuccessful  
D. Unqualified

62. The university has a large yearly intake; very few \_\_\_\_\_ take place.  
A. Turnouts  
B. Rejections  
C. Expulsions  
D. Obstruction

63. Rather than make derogatory remarks about the host, a guest should make \_\_\_\_\_ ones.  
A. Polite  
B. Complementary  
C. Interesting  
D. Honest

64. Our mechanized services contrast sharply with the \_\_\_\_\_ operation we had before.  
A. Electrical  
B. Controlled  
C. Original  
D. Manual

65. After ade had listen to some advice, his rigid ideas became more \_\_\_\_\_.  
A. Friendly  
B. Compromising  
C. Flexible  
D. Democratic

**From the word lettered A to D below each of the following sentences, choose a word or group of words that**

**is nearest in meaning to the underlined word as it is used in the sentence.**

66. The marathon is a gruelling race.

- A. Powerful
- B. Exhausting
- C. Interesting
- D. Distant

67. The work of art in this gallery are priceless.

- A. Irreplaceable
- B. Precious
- C. Invaluable
- D. Durable

68. The detective was perplexed when the clues pointed to several suspects.

- A. Excited
- B. Worried
- C. Confused
- D. Discouraged

69. My father was sceptical about the story I told him.

- A. Ignorant
- B. Doubtful
- C. Embarrassed
- D. Lukewarm

70. The suspect refused to divulge the source of his information.

- A. Confirm
- B. Disclose
- C. Extract
- D. Affirm

**After each of the following sentences, a list of possible interpretations is given. Choose the interpretation that you consider appropriate for each sentence.**

71. Bala's father gave him free hand to run the family business. This means that his father\_\_\_\_\_

- A. Assisted him freely
- B. Allow him to make his own decisions
- C. Made him sole owner of the decision
- D. Allowed him freedom of movement in the premises

72. The senator's house is the last word in comfort. This means that\_\_\_\_\_

- A. Has the most comfortable house
- B. Speaks about the comfort of his house

- C. Owns the last house in the comfort
- D. Has a house that is not comfortable

73. I was given a standing ovation for my outstanding performance. This means that the senator\_\_\_\_\_

- A. Everyone stood up to clap for me
- B. Everyone stood to catch a glimpse of me
- C. Everyone congratulated me
- D. I was asked to stand up

74. We left kano one year ago to the day. This means that we left kano\_\_\_\_\_

- A. Exactly one year ago
- B. One year minus a day
- C. One year and a day
- D. About a year ago

75. I am not going to say yes or no until you come out into the open. This means that I will not give an answer until

- A. We go both outside
- B. We agree on a position
- C. You go outside
- D. You reveal your own position

#### **SECTION IV: PHYSICS**

76. The nucleon number and the proton number of an element are 23 and 11 respectively, how many neutrons are present in the atom?

- A. 11
- B. 12
- C. 23
- D. 34

77. Which of the following is a scalar quantity?

- A. Momentum
- B. Acceleration
- C. Displacement
- D. Distance
- E. Force

78. Which of the following is not an example of a force?

- A. Tension
- B. Weight
- C. Friction
- D. Mass
- E. Thrust

79. Which of the following is a derived unit?

- A. Ampere
- B. Kilogram

- C. Second
- D. Ohm
- E. Kelvin

80. The basic difference between the transverse waves and a longitudinal wave traveling in the same direction in a medium is in the\_\_\_\_\_

- A. Amplitude of the wave
- B. Wavelength of the wave
- C. Direction of vibration of the particles of the medium
- D. Period of vibration of the particles

81. When a metal ball is heated through  $30^{\circ}\text{C}$  its volume becomes  $1.00180\text{ms}^{-3}$  if the linear expansivity of the material of the ball is  $2.0 \times 10^{-5}\text{K}^{-1}$  calculate its original volume.

- A.  $1.0000\text{cm}^3$
- B.  $1.0020\text{cm}^3$
- C.  $1.0036\text{cm}^3$
- D.  $1.0038\text{cm}^3$
- E.  $1.0045\text{cm}^3$

82. Which of the following radiations has the highest frequency?

- A. Radio waves
- B. Light waves
- C. X-rays
- D. Infrared rays
- E. Ultraviolet rays

83. Which of the following reasons explain why the walls and ceilings of a standard concert halls are usually covered with perforated pads? To\_\_\_\_\_

- A. Increase the intensity of the sound waves
- B. Increase the loudness of the sound waves
- C. Reduce the effects of reverberation of sound waves
- D. Decrease the frequency of sound waves

84. Calculate the length of a constant wire of cross-sectional area  $4\pi \times 10^{-8}\text{m}^2$  and resistivity  $1.1 \times 10^{-6}\Omega\text{m}$  (take  $\pi$  as  $\frac{22}{7}$ )

- A. 0.42m
- B. 0.90m
- C. 1.00m
- D. 2.25m

85. A body moves along a circular path with uniform angular speed of  $0.6\text{rad s}^{-1}$  and a constant speed of  $3.0\text{ms}^{-1}$ . Calculate

the acceleration of the body toward the centre of the circle.

- A.  $25.0\text{ms}^{-2}$
- B.  $5.4\text{ms}^{-2}$
- C.  $5.0\text{ms}^{-2}$
- D.  $1.8\text{ms}^{-2}$
- E.  $0.2\text{ms}^{-2}$

86. Which of the following statement is true?

- A. The loudness of sound is determined by its frequency
- B. Musical notes consists of combination of sounds and regular frequency
- C. The combination of overtones produced by musical instrument determine the quality of sound
- D. The pitch of a note depends on frequency of vibration
- E. Noise can be produced by a combination of sounds of irregular sounds

87. A boy timed 20 oscillation of a certain pendulum three times and obtained 44.3s, 45.5s, and 47.7s respectively.

Calculate the mean period of oscillation of the pendulum

- A. 0.13s
- B. 2.22s
- C. 2.26s
- D. 44.30s
- E. 45.17s

88. Which of the following statement is an advantage of nuclear fusion over nuclear fission?

- A. The resulting chain reaction which produces large amount of energy
- B. No radioactive waste is produced as by-product
- C. Very high temperature is required in the process
- D. The end product is lead
- E. Radioactive waste is generated

89. A ball bearing is projected vertically upward from the ground with a velocity of  $15\text{m s}^{-1}$  calculate the time taking by the ball to return to the ground

[ $g = 10\text{ms}^{-2}$ ]

- A. 1.5s
- B. 4.5s
- C. 4.0s
- D. 5.3s
- E. 3.0s

90. An electric motor is a machine that converts\_\_\_\_\_

- A. Mechanical energy into electrical energy
- B. Electrical energy into electrical energy
- C. High voltage to low voltage
- D. low voltage to High voltage
- E. high energy to low energy

91. what change in the velocity would be produced on a body of mass 4kg if a constant force of 16N acts on it for 2s?

- A.  $0.5 \text{ ms}^{-1}$
- B.  $8.0 \text{ ms}^{-1}$
- C.  $2.0 \text{ ms}^{-1}$
- D.  $9.0 \text{ ms}^{-1}$
- E.  $10.0 \text{ ms}^{-1}$

92. In a domestic circuit, electrical appliances and lamps are arranged in a parallel across the main so as to enable the\_\_\_\_\_

- A. Same current to flow through the electrical appliances and lamps
- B. Maximum energy to be consumed at least cost
- C. Same fuse to be used for the electrical appliances and the lamps
- D. Voltage across the appliances not to be affected when the lamps are switch on and off
- E. Heat losses to be minimized

93. A loaded spring perform simple harmonic motion with and amplitude of 5cm, if the maximum acceleration of the load is  $20\text{cm}^{-2}$ . Calculate the angular frequency of the motion

- A.  $2 \text{ rad s}^{-1}$
- B.  $4 \text{ rad s}^{-1}$
- C.  $6 \text{ rad s}^{-1}$
- D.  $8 \text{ rad s}^{-1}$
- E.  $10 \text{ rad s}^{-1}$

94. When compared with water, mercury is prepared as a thermometric liquid because it\_\_\_\_\_

- A. Has higher density
- B. Has lower specific heat capacity
- C. Exhibit anomalous thermal expansion
- D. Contains molecules which have very strong adhesive forces
- E. Has higher specific heat capacity

95. How far from a cliff should a boy stand in order to hear the echo of his clap 0.9s later? (speed in sound air =  $330\text{ms}^{-1}$ )

- A. 121.67m
- B. 148.50m
- C. 123.45m
- D. 134.33m
- E. 149.35m

96. A body dropped from a certain height above the ground level falls with uniform\_\_\_\_\_

- A. Speed
- B. Velocity
- C. Acceleration
- D. Retardation
- E. Rotation

97. Which of the following values on the absolute scale of temperature is the ice point.

- A. 0K
- B. 32K
- C. 100K
- D. 273K
- E. 723K

98. A force acting on a body causes a change in the momentum of the body from  $12\text{kgms}^{-1}$  to  $16\text{kgms}^{-1}$  in 0.2s. calculate the magnitude of the force.

- A. 14.0N
- B. 20.0N
- C. 4.0N
- D. 0.8N
- E. 19.0N

99. Which of the following is not a reason for using soft iron in making core of a transformer?

- A. Retains its magnetism for a long time
- B. Is easily magnetized
- C. Reduces energy loss due to hysteresis
- D. Is easily demagnetized
- E. None of the above

100. The main function of the mouth piece of a telephone is that; it converts sound energy to\_\_\_\_\_

- A. Mechanical energy
- B. Electrical energy
- C. Chemical energy
- D. Thermal energy

**BIOLOGY ANSWERS:**

1. A 2. B 3. A 4. C 5. C 6. D 7. B 8. D 9. C  
10. C 11. A 12. C 13. D 14. A 15. A 16. A  
17. B 18. A 19. C 20. D 21. A 22. D 23. B  
24. A 25. A

**CHEMISTRY ANSWERS:**

26. E 27. A 28. D 29. C 30. A 31. D 32. E  
33. 34. D 35. 36. 37. A 38. 39. C 40.A  
41. B 42. 43. B 44. B 45. B 46. D 47.C  
48.D 49.B 50.D

**ENGLISH ANSWERS:**

51. A 52. B 53. A 54. C 55. D 56. A  
57. C 58. C 59. B 60. C 61. C 62. A  
63. A 64. D 65. C 66. A 67. A 68. C  
69. C 70. B 71. A 72. C 73. D  
74. D 75. D

**PHYSICS ANSWERS:**

76. 77. 78. 79. 80. A 81. 82. 83. C 84.  
85. E 86. 87. E 88. A 89. C 90. B 91. B  
92. 93. B 94. D 95. B 96. A 97. B 98. B  
99. D 100. B

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## 2016/2017 POST UTME SCREENING EXERCISE

### INSTRUCTIONS:

- I. Candidates should fill in all sections of the answer sheet;
- II. Candidates are required to answer all questions;
- III. Candidates are to shade their correct options boldly, using HB pencil, on the answer sheet provided.

**Time allowed:** 60 minutes

### SECTION I: ENGLISH LANGUAGE

***Read the passage below carefully and answer the questions that follow.***

Those who have been following the arguments for or against the deregulation of the oil industry in Nigeria may have got the impression that deregulation connotes or indifference on the part of the government. But there is nothing so far from official quarters to suggest that deregulation will cause the government to relinquish its control of oil industry because the absence of oil industry does not mean it will surrender all its rights to entrepreneurs who may want to participate in the industry.

Yet the opposition express so far against deregulation stems from fear that government may leave Nigerians at the mercy of heartless cartel who will command height of the oil industry and cause the pump price of oil to rise above the means of most Nigerians. As a result of such fears, many Nigerians have become resentful in deregulation and, in fact the Nigerian labour Congress [NLC] has threatened to deregulate the government if it should go ahead with the deregulation plan. But Nigerians have not fared any better with the economy totally in the government control. Until recently, the most important sectors of the economy were in hands of the government, Today the deregulation of some of these sectors has broken its monopoly and introduce healthy competition to make things a little easier for Nigerians. A good example is the stifling monopoly of the Nigerian airways.

Today, the traveller is king at the Nigerian airports as oppose to the air travels used to be under Nigeria airways monopoly. Before, it was almost easier for a camel to pass through the eye of a needle than travellers to board a plane. Following from this, the apostle of deregulation rightly heap all the blames for the problems associated with the petroleum products distribution in this county squarely on the government. Which owns all the refineries and which sells petroleum product to its consumers through its agency, the Nigerian National Corporation [NNPC]. In the same way, the government argues that if the government NNPC monopoly were broken with the introduction of entrepreneurs to the refining and sale of petroleum product in the country, the Nigerian population will be all better for it. It stands to reason that ones the government continuous to fix maximum prices for petroleum product in the country, the deregulation of the oil sector should bring some relief to the people by ensuring that wastage, corruption and inefficiency are reduced to the minimum. Consumers will also have the last laugh because competition will result prices. This appears to be the sense in the deregulation.

1. Which of these correctly summarises the arguments adduced by the advocates of deregulation?
  - A. Deregulating the economy will make the NNPC more efficient and less wasteful
  - B. The government should deregulate every aspect of the Nigerian economy
  - C. Competition in the oil industry will be
  - D. Completion should be allowed in the production and distribution of petroleum products
2. Which of the following conclusions can be reached from the passage?
  - A. The deregulation of the economy will solve all the problems of petroleum products and distribution
  - B. The government is hell-bent on leaving Nigerians at the mercy of a heartless cartel
  - C. Nigerians cannot buy fuel at exorbitant prices

D. The deregulation of the oil industry does not preclude the Government from exerting its influence

3. An appropriate title for this passage is \_\_\_\_\_

- A. The advantage of a deregulated economy.
- B. Making a case for deregulations.
- C. Highlighting the dangers of deregulations
- D. The problems of the NNPC

4. Which of the following is true according to the passage?

- A. The Nigerian labour congress has been able to prevent the Government from deregulating the economy
- B. The introduction of entrepreneurs to the oil industry will make life easy only for a few Nigerians
- C. The opposition to the deregulation of the oil industry is not unanimous
- D. A better life for all Nigerians is conditional upon the deregulation of the economy.

5. The writer seems to suggest that \_\_\_\_\_

- A. Nigerians do not understand the sense in deregulations
- B. The anxiety cause by the deregulation question is groundless
- C. A deregulated economy will the Government to be indifferent to the flight of ordinary Nigerians
- D. Only a heartless cartel will benefit by the deregulation of the oil industry

**The passage has gap numbered 6 to 10. Choose the most appropriate option for each gap from the options provided.**

It is the business of scientist to accumulate knowledge about the universe and all of that is in it, and to find, if he is able common \_\_\_6\_\_\_ which underlie and account for the facts that he knows. He chooses when he can, the method of the controlled \_\_\_7\_\_\_ if he wants to find the effect of light in growing plants, he takes many plants, as like as possible. Some in the dark and all the time keeping all other \_\_\_8\_\_\_ (temperature, moisture, nourishment) the same. In this way, by the light only, the effect of light in plant can be clearly seen. This \_\_\_10\_\_\_ of using 'controls' can be apply

of a variety of situations, and can be used to find the answers to questions are widely different as possible.

- 6. A. experiment
- B. instruments
- C. approaches
- D. factors

- 7. A. respondent
- B. experiment
- C. system
- D. data

- 8. A. studies
- B. procedures
- C. objects
- D. conditions

- 9. A. Constant
- B. good
- C. dark
- D. Natural

- 10. A. research
- B. method
- C. tool
- D. rational

**In each of questions 11 to 15, the word in capital letters has the emphatic stress. Choose the option that best fits the expression in the sentence.**

11. He travelled ONLY 20 kilometres before his car stops.

- A. Did he travelled only 20 kilometres before his car stopped?
- B. Did he travelled exactly 20 kilometres before his car stopped?
- C. Did you walk only 20 kilometres before his car stopped?
- D. Did travel more than 20 kilometres before his car stopped?

12. The king RAN into the palace.

- A. Where did the king ran into?
- B. Did the king walk to the palace?
- C. Did the queen run to the palace?
- D. Who ran to the palace?

13. The university has been TEMPORARILY closed.

- A. Has the campus been permanently closed?

- B. Has the university been permanently closed?  
 C. Has the university been permanently closed?  
 D. Has the college been temporarily closed?

14. The man BOUGHT the newspaper.  
 A. Is this the news which the man bought?  
 B. Did the man read the newspaper?  
 C. Who bought the newspaper?  
 D. What did the man buy?

15. My uncle retired from the police.  
 A. did brother resign from the police?  
 B. did sister resign from the police?  
 C. did uncle retire from the police?  
 D. did brother retire from the police?

### SECTION II: CIVIL EDUCATION

16. Which of the following is an acceptable societal value?  
 A. Honesty  
 B. Merriment  
 C. Praise singing  
 D. Family planning

17. Which of the following is an effective way of resolving inter-communal conflict?  
 A. Meditation  
 B. Dialogue  
 C. Litigation  
 D. Avoidance

18. When there is dispute in a community, members should\_\_\_\_\_  
 A. Be indifferent in the issue  
 B. Cooperate with others  
 C. Leave the community entirely  
 D. Be resolute to their cause

19. Community development project can best be achieved if the people are\_\_\_\_\_  
 A. Cooperative  
 B. Religious  
 C. Optimistic  
 D. Knowledgeable

20. Which of the following is the major problem of the Nigerian Civil service?  
 A. Neutrality  
 B. Red tapism  
 C. Impartiality  
 D. Anonymity

### SECTION III: BIOLOGY

21. An amoeba and an unlaidd chicken egg are;  
 A. Animal tissues  
 B. Organelles  
 C. Single cells  
 D. Organisms

22. In corms, food is usually stored in the\_\_\_\_\_  
 A. Leaves  
 B. Stems  
 C. Roots  
 D. Buds

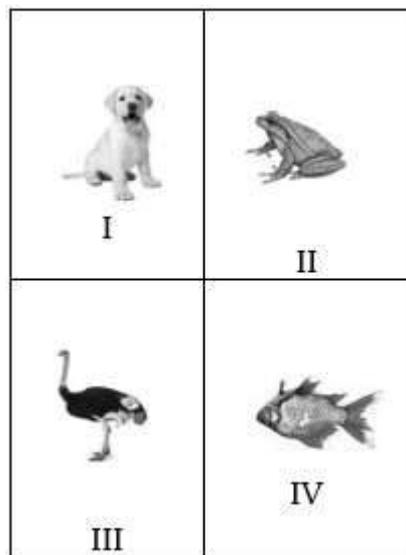
23. The animals that move by means of flagella include\_\_\_\_\_  
 A. Chlamydomonas and euglena  
 B. Planaria and amoeba  
 C. Amoeba and hydra  
 D. Paramecium and planaria

24. The structures found only in plant cell are\_\_\_\_\_  
 A. Cell membranes and cytoplasm  
 B. Chromatin nucleolus  
 C. Cell wall and chloroplast  
 D. Cell membranes and lysosome

25. A flower that has both stamens and pistil are said to be\_\_\_\_\_  
 A. Staminate  
 B. Pistillate  
 C. Perfect  
 D. Imperfect

26. When oil is poured into the breeding site of mosquitoes, it\_\_\_\_\_  
 A. Deprives the larvae of water  
 B. Kills the adults  
 C. Suffocates the pupae  
 D. Slows down egg development

**Use the diagram below to answer questions 27 and 28.**



27. The correct evolutionary sequence of the organisms represented is

- A. I → III → II → IV
- B. II → III → IV → I
- C. III → II → I → IV
- D. IV → II → III → I

28. Ovoviviparity is the type of fertilization exhibited by the organism labelled

- A. I
- B. II
- C. III
- D. IV

29. The carnassial teeth of a carnivorous animal consists of \_\_\_\_\_

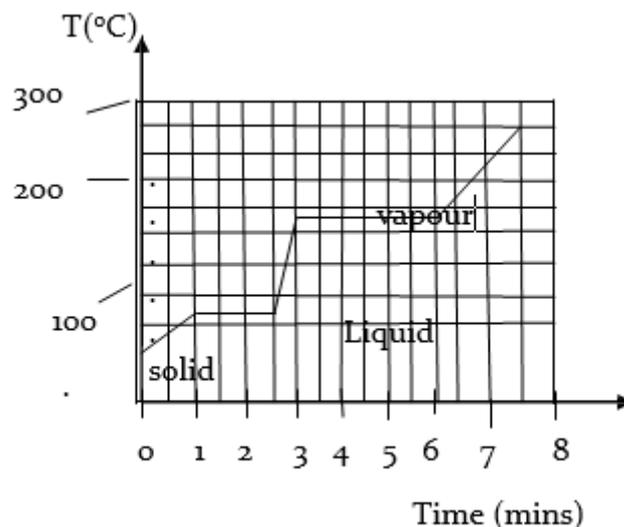
- A. Last upper premolar and the first lower molar
- B. Last upper molar and the last molar
- C. First upper premolar and the first lower molar
- D. First upper molar and first lower molar

30. Examples of organisms in which extracellular digestion occur are

- A. Fungus, lorchanthus and housefly
- B. Rhizopus, sponges and earthworm
- C. Roundworm, tapeworm and hydra
- D. Rhizopus, housefly, hydra

#### SECTION IV: CHEMISTRY

Use the graph below to answer questions 1 to 2.



31. If the gas is cooled at what temperature will start to condensate?

- A. 125°C
- B. 150°C
- C. 175°C
- D. 250°C

32. How long does it takes all the solid to melt?

- A. 2.5mins
- B. 6.0mins
- C. 1.0mins
- D. 3.0mins

33. Which of the following represent hybridization in ethyne?

- A.  $Sp^2$
- B.  $Sp^2d$
- C.  $Sp^3$
- D.  $Sp$

34. When chlorine is passed into water and the resulting solution ss exposed to sunlight, the product formed are \_\_\_\_\_

- A. Chlorine gas and hydrogen
- B. Oxygen and oxochlorate [I] acid
- C. Chlorine gas and oxochlorate [I] acid
- D. Hydrochloric acid and oxygen

35. A burning candle produces water and \_\_\_\_\_

- A. Carbon(II) oxide
- B. Carbon(IV) oxide
- C. Oxygen
- D. Hydrogen

36. If 0.75 mole of cyclopropane 0.66 mole of oxygen are mixed in vessel with a total pressure of 0.1 atmosphere, what is the partial pressure of oxygen in the mixture?

- A. 0.55 atmosphere

- B. 0.44 atmosphere  
 C. 0.33 atmosphere  
 D. 0.22 atmosphere

37. The processes which return carbon (IV) oxide to the atmosphere include\_\_\_\_\_

- A. Photosynthesis, decay and respiration  
 B. Photosynthesis, respiration and transpiration  
 C. Respiration, decay and combustion  
 D. Ozone depletion, combustion and decay

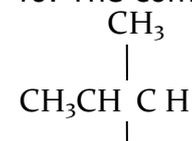
38. The postulate of Daltons atomic theory which stills hold is that\_\_\_\_\_

- A. Particles of different elements combine in a simple whole number ratio  
 B. Atom can neither be created nor destroyed  
 C. The particles of the same elements are exactly alike  
 D. All elements are made of small indivisible particles

39. Which of the following gives a precipitate when treated with NaOH solution?

- A.  $\text{Na}_2\text{CO}_3$   
 B.  $\text{CH}_3\text{COONa}$   
 C.  $\text{NH}_4\text{Cl}$   
 D.  $\text{AlCl}_3$

40. The compound below is a\_\_\_\_\_



- A. Tertiary alkanol  
 B. Primary alkanol  
 C. Glycol  
 D. Secondary alkanol

## SECTION V: PHYSICS

41. The efficiency of a machine is always less than 100% because the\_\_\_\_\_

- A. Velocity ration is always greater than the mechanical advantage  
 B. Work output is always greater than then work input  
 C. Effort applied is always greater than the load lifted  
 D. Load lifted is always greater than the effort applied

42. The height at which atmosphere ceases to exist is about 80km. if the atmospheric pressure on the ground level is 760mmHg, the pressure at a height of 20km above the ground level is\_\_\_\_\_

- A. 380 mmHg  
 B. 190 mmHg  
 C. 750 mmHg  
 D. 480 mmHg

43. A stone of mass 1kg is dropped from a height of 10m above the ground and falls freely under gravity. Its kinetic energy 5m above the ground is the equal to\_\_\_\_\_

- A. Its kinetic energy on the ground.  
 B. Half its initial potential  
 C. initial potential energy  
 D. twice its initial potential energy

44. a plane sound wave of frequency 85.5Hz and velocity  $342\text{ms}^{-1}$  is reflected from a vertical wall. At what distance from the wall does the wave have an antinode?

- A. 1m  
 B. 0m  
 C. 2m  
 D. 3m

45. A ray of light strikes a plain mirror at an angle of incidence of  $35^\circ$ . If the mirror is rotated through  $10^\circ$ , through what an angle is the reflected ray is rotated?

- A.  $45^\circ$   
 B.  $20^\circ$   
 C.  $70^\circ$   
 D.  $25^\circ$

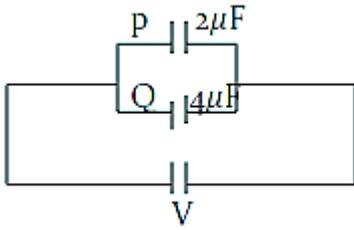
46. The driving mirror of a car has a radius of curvature of 1m. A vehicle behind the car is 4m from the mirror. Find the image distance behind the car

- A. 8/7  
 B. 4/7  
 C. 4/9  
 D. 9/2

47. A bread toaster uses a current of 4A when plugged in a 240 volts line. If it takes one minute to toast slice of bread, What is the energy consumed by the toaster?

- A.  $3.60 \times 10^3\text{J}$   
 B.  $5.76 \times 10^4\text{J}$   
 C.  $1.60 \times 10^2\text{J}$   
 D.  $1.60 \times 10^4\text{J}$

48. The diagram below shows two capacitors P and Q and capacitances  $2\mu\text{F}$  and  $4\mu\text{F}$  respectively connected to d.c source.



The ratio of energy stored in P to Q is \_\_\_\_\_

- A. 1 : 2
- B. 2 : 1
- C. 4 : 1
- D. 1 : 4

49. The force of a current carrying conductor in a magnetic field is greatest when the \_\_\_\_\_

- A. Conductor is at right angles within the field
- B. Force is independent of the angle between the field and the conductor
- C. Conductor is parallel with the field
- D. Conductor makes an angle of  $60^\circ$  with the field

50. The eye controlled the amount of light reaching the retina by adjusting the \_\_\_\_\_

- A. Cornea
- B. Iris
- C. Retina
- D. Optic nerve

#### ENGLISH ANSWERS:

1. D 2. A 3. A 4. A 5. A 6. D 7. D 8. D 9. A

10.B 11.B 12.B 13.B 14.B 15.C

#### CIVIC EDUCATION ANSWERS:

16.A 17.B 18. 19.A 20.

#### BIOLOGY ANSWERS:

21.C 22.B 23.A 24.C 25.C 26.C 27. 28.

29.A 30.B

#### CHEMISTRY ANSWERS:

31.B 32.A 33.D 34.D 35.B 36.C 37.C 38.

39.C 40.

#### PHYSICS ANSWERS:

41.A 42.C 43.A 44.A 45.B 46.C 47. 48.

49.A 50.B

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## 2017/2018 POST UTME SCREENING EXERCISE

### SECTION I: ENGLISH LANGUAGE

A wolf, seeing a lamb drinking from a river, wanted to find a pretext for devouring him. He stood higher up the stream and the lamb of muddying the water so that he could not drink. The lamb said that he drink only with the tip of his tongue, and that in any case he was standing lower down the river, and could not possibly disturb the water higher up: *when this excuse failed him*, the wolf said: well, last year you insulted my father I was not even born then, replied the lamb.

You are good at finding answers, said the wolf, "but what do you mean by taking up so much of the path where I am walking?" The lamb, frightened at the wolf's *angry tone and terrible aspect*, told him with all due submission, that he could not conceive how his walking on such a wide could occasion him any convenience. What! exclaimed the wolf, seemingly in great anger and indignation. 'You are as imprudent as your father who seized me by the throat last year, and caused me to be kept in cage for three months'. If you will believe me, 'said the lamb my parents are poor simple creatures who lived entirely by green stuffs, we are none of us hunters of your species, ' 'Ah I see its no use talking to you' said the wolf, drawing up closed to him. 'it runs in the blood of your family to hate us wolf and therefore we have come conveniently together, I'll just pay off a few of your fore fathers' scores before we part.' So, saying, he leapt at the lamb from behind and garrotted him.

1. The expression *when this excuse failed him* suggest that the
  - A. Wolf only made up the charges levelled against the lamb.
  - B. Lamb was more intelligent than the wolf
  - C. Lamb was prepared for the charges levelled against him
  - D. Wolf was uncertain of the charges made against him
  
2. The expression *angry tone and terrible aspect* refers to the wolf's \_\_\_\_\_
  - A. Sonorous voice and overbearing attitude
  - B. Towering size and thunderous voice

- C. Harsh voice menacing posture
  - D. Loud voice and fretting movement
3. Which of the following aptly describe the moral of the story?
    - A. The sins of the forefather are visited upon the children no matter how long it takes
    - B. If you have made up your mind to hang your dog, any rope will do for the purpose.
    - C. The law is weak in defence of the poor against the rich and mighty.
    - D. No matter how highly placed he is in the society, the unmindful law breaker will always meet his nemesis
  
  4. From the way the story ended, it can be concluded that the \_\_\_\_\_
    - A. Lamb did not survive the encounter.
    - B. Wolf and the lamb parted amicably
    - C. Wolf had encountered the lamb parents.
    - D. Lamb offended the wolf quite seriously.
  
  5. The charges levelled against lamb are \_\_\_\_\_
    - A. Greed, wandering, insolence, disrespect.
    - B. Exuberance, pollution, wickedness, and stubbornness.
    - C. Garrulity, loquacity, pride and arrogance.
    - D. Pollution, insolence, obstruction and aggression.

**The passage bellow has gaps numbered 6 to 10. Choose the most appropriate option for each gap from the options provided.**

Capitalism is an economic system which found in hr the principle of free enterprise and the private ownership of the means of production and distribution. The \_\_6\_\_ of capitalism claim that its initial characteristic is economic \_\_7\_\_ the producer is free to produce whatever goods he \_\_8\_\_, but the \_\_9\_\_ is equally free to buy what he wants. There is market mechanism under this system, which brings the producer and consumer together and tends to equate the supplies of one to the demands of the other, and \_\_10\_\_ the whims and caprice of both.

6. A. protagonist  
B. antagonist  
C. determiners  
D. attorneys

7. A. exploitations  
B. manipulation  
C. manoeuvring  
D. freedom

8. A. sells  
B. buys  
C. fancies  
D. manufactures

9. A. Customer  
B. consumer  
C. controller  
D. marketer

10. A. neutralize  
B. harmonize  
C. settle  
D. decide

**In each of questions 11 to 15, select the option that best explain the information conveyed in the sentence.**

11. Everyone was ready to play the devil's advocate in the impeachment controversy.  
A. Everyone was willing to speak against the impeachment to encourage discussion on it.  
B. Everyone was willing to defend an unpopular point of view concerning the impeachment  
C. Everyone was willing to fight for the defenceless citizens no matter the consequences.  
D. Everyone was willing to be an evil genius in the controversy

12. Adamu's father was a key figure in that ministry.  
A. The ministry trust Adamu's father as a central figure  
B. Adamu's father was a figurehead in the ministry  
C. Adamu's father position is essential in the ministry  
D. Adamu`s father keeps the key to the ministry

13. The government warns that drink-driving is a punishable under the law \_\_\_\_\_

- A. A drunkard driving can be punished  
B. Driving while drive is an offence  
C. Drinking while driving is an offence  
D. Drinking and driving is an offence

14. In many countries, is ostensibly being practice \_\_\_\_\_  
A. Democracy is indeed being practice in many practice  
B. Many countries have effective democracy  
C. Many countries have democracy in practice .  
D. Democracy is apparently practiced in many countries

15. The investigators stated clearly that they had reach a dead end in their scrutiny of suspects in the murder case  
A. The investigators did not know what to do with the suspects' murder.  
B. The investigators has evidence to sentence the suspect to death in the end.  
C. There was no further progress in the investigation of the murder suspects.  
D. The end had come for the suspects in the murder case

## SECTION II: GENERAL KNOWLEDGE

16. What does the eagle in the Nigerian coat of arm represent?  
A. Peace  
B. Terror  
C. Agriculture  
D. Strength

17. The supreme organ of the united nation organization is the \_\_\_\_\_  
A. General assembly  
B. Secretary general  
C. World court  
D. World bank

18. The military government in Nigeria was headed by  
A. General Murtala Muhammad  
B. General Yakubu Gowon  
C. General Agunyi Ironsi  
D. General Olusegun Obasanjo

19. Which of the following is NOT one if the data processing function of a computer?  
A. Gathering data information  
B. Passing data information  
C. Analyzing the data or information  
D. Oaring the data or information

20. The computer system language "DOS" stand for?

- A. Disc Operating System
- B. Disc Operating Session
- C. Digital Operating System
- D. Digital Open System

### SECTION III: BIOLOGY

21. The process in which complex substance are broken down into simpler ones is refer to as\_\_\_\_\_

- A. Metabolism
- B. Tropism
- C. Anabolism
- D. Catabolism

22. The organ which is sensitive to light in euglena is\_\_\_\_\_

- A. Chloroplast
- B. eyespot
- C. gullet
- D. flagellum

23. The organelles present in cells that actively respiring and photosynthesizing are\_\_\_\_\_

- A. Nucleus and centrioles
- B. Mitochondria and chloroplast
- C. Lysosomes and ribosomes
- D. Golgi apparatus and endoplasmic reticulum

24. Which of the following describes a characteristic of arthropods?

- A. The body is not divided by a number of segments
- B. The body is covered by chitin
- C. The organism find it easy to grow freely
- D. The organism has a pair of jointed appendages

25. Which of the following distinguishes a butterfly from a moth?

- A. They have similar antennae
- B. The abdomen of moth is fatter than that of butterfly
- C. The wings of butterfly rest horizontally but those of moth rest vertically
- D. Both are active during the day

26. The plants that grow in deserts or very dry areas are refer to as\_\_\_\_\_

- A. Epiphytes
- B. Xerophytes

- C. Mesophytes
- D. Hydrophytes

27. The structural adaptation for desert plants for water conservation is\_\_\_\_\_

- A. Spiny leaves
- B. Prominent stomata in leaves
- C. Broad leaves with numerous stomata
- D. Spongy mesophyll

28. Fungi are referred to as heterotrophs because they\_\_\_\_\_

- A. Have mycelium
- B. Lack roots
- C. Are filamentous
- D. Lack chlorophyll

29. The blood circulatory system of vertebrates consists of\_\_\_\_\_

- A. Heart, aorta, arteries and veins
- B. Heart, vena cava, arteries and veins
- C. Heart, arteries, capillaries and veins
- D. Heart, aorta, capillaries and veins

30. The blood circulatory system of vertebrates consists of\_\_\_\_\_

- A. Heart, aorta, arteries and veins
- B. Heart, vena cava, arteries and veins
- C. Heart, arteries, capillaries and veins
- D. Heart, aorta, capillaries and veins

### SECTION IV: CHEMISTRY

31. What volume of carbon (II) oxide is produce by reacting excess carbon with 10dm<sup>3</sup> of oxygen?

- A. 15dm<sup>3</sup>
- B. 10dm<sup>3</sup>
- C. 5dm<sup>3</sup>
- D. 20dm<sup>3</sup>

32. The rate of diffusion of gas Y is twice that of Z. if the relative molecular mass of Y is 64 and the two gases diffuse under the same conditions, find the relative molecular mass of Z.

- A. 8
- B. 16
- C. 32
- D. 256

33. How many unpaired electrons are in the p-orbital of a fluorine atom?

- A. 1
- B. 2
- C. 3

D. 0

34. Which of the following molecule is held together by hydrogen bond?

- A.  $\text{H}_2\text{SO}_4$
- B. HF
- C.  $\text{CH}_4$
- D. HBr

35. The bond formed between two elements with electron configuration  $1s^2 2s^2 2p^6 3s^2$  and  $1s^2 2s^2 2p^4$  is \_\_\_\_\_

- A. Dative
- B. Ionic
- C. Metallic
- D. Covalent

36. In an electrochemical cell, polarization is caused by \_\_\_\_\_

- A. Tetraoxosulphate (IV) acid
- B. Hydrogen
- C. Chlorine
- D. Oxygen

37. The minimum amount of energy required for a reaction to take place is \_\_\_\_\_

- A. Activation energy
- B. Kinetic energy
- C. Lattice energy
- D. Ionization energy

38. In an endothermic reaction, if there is a loss in entropy, the reaction will \_\_\_\_\_

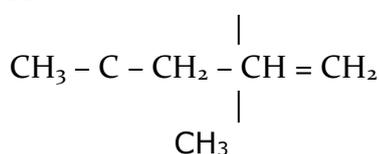
- A. Not be spontaneous
- B. Be at equilibrium
- C. Be indeterminate
- D. Be spontaneous

39. In the laboratory preparation of ammonia, the flask is placed in a slanting position, so as to \_\_\_\_\_

- A. Enhance the speed of reaction
- B. Prevent formation of precipitate
- C. Prevent condensed water from breaking the reaction flask
- D. Enable the proper mixing of the reactant in the flask.

40.

H



The IUPAC nomenclature for the

compound above is

- A. 2-methylpent-1-ene
- B. 2-methylpent-2-ene
- C. 4-methylpent-1-ene
- D. 3-methylpent-2-ene

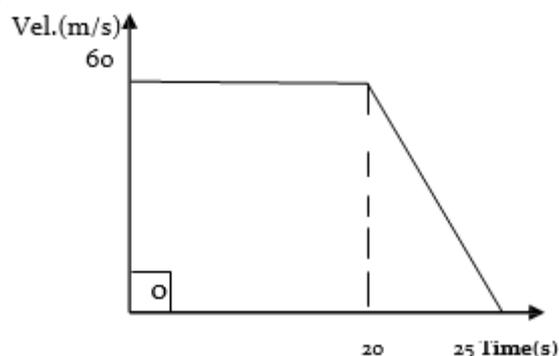
### SECTION V: PHYSICS

41. In order to remove error from parallax when taking measurements with a meter rule, the eye should be focused \_\_\_\_\_

- A. Slantingly towards the left on the markings
- B. Slantingly toward the right on the markings
- C. Vertically downwards on the markings
- D. Vertically upwards on the markings

42. A load is pulled at a uniform speed along horizontal floor by a rope at  $45^\circ$  to floor. If the force in the rope is 1500N, what is the frictional force on the load? A.

- 1524N
- B. 1350N
- C. 1260N
- D. 1061N



From the velocity-time graph shown above, which of the following quantities CANNOT be determined?

- A. Deceleration
- B. Initial velocity
- C. Total distance travelled
- D. Initial acceleration

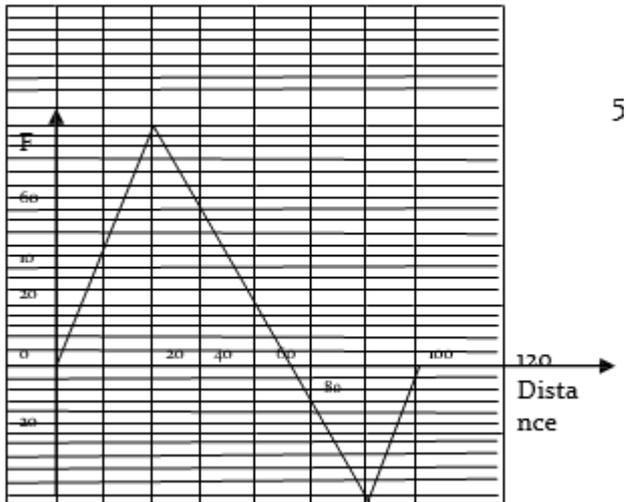
44. A rocket is fired from the earth's surface to a distance planet. By Newton's law of universal gravitation, the force  $F$ , will \_\_\_\_\_

- A. Increase as  $a$  reduces
- B. Increase as  $G$  varies
- C. Remains constant
- D. Increases as  $r$  reduces

45. An object move in a circular path of radius 0.5m with a speed of  $1\text{ms}^{-1}$ . What is its angular velocity?

- A.  $8\text{ rads}^{-1}$
- B.  $4\text{ rads}^{-1}$
- C.  $2\text{ rads}^{-1}$
- D.  $1\text{ rads}^{-1}$

46.



From the diagram above, calculate the work done when the particles moves from  $x=0\text{m}$  to  $x=80\text{m}$ .

- A. 1200J
- B. 2400J
- C. 6000J
- D. 7000J

47. A pinhole camera is placed 300m in front of a building so that the image is formed on a screen 5cm from the pinhole. If the image is 2.5cm high, the height of the building will be\_\_\_\_\_

- A. 25m
- B. 50m
- C. 100m
- D. 150m

48. After reflection from the concave mirror, rays of light from the sun converges\_\_\_\_\_

- A. At the radius of curvature
- B. At the focus
- C. Beyond the radius of curvature
- D. Between the focus and radius of curvature

49. Dispersion of white light is the ability of white light to\_\_\_\_\_

- A. Penetrate air, water and glass
- B. Move in a straight light
- C. Move around corners

D. Separate to its component colours

50. A piece of a radioactive material contains 100 atoms. If its half-life is 20 seconds, the time taking for 124 atoms to remain is\_\_\_\_\_

- A. 20 seconds
- B. 40 seconds
- C. 60 seconds
- D. 80 seconds

#### ENGLISH ANSWERS:

1. D 2. C 3. B 4. C 5. A 6. A 7. D 8. B 9. B

10. D 11. A 12. C 13. B 14. D 15. C

#### GENERAL KNOWLEDGE ANSWERS:

16. D 17. A 18. C 19. B 20. C

#### BIOLOGY ANSWERS:

21. D 22. B 23. B 34. B 25. C 26. B 27. A

28. D 29. C 30. C

#### CHEMISTRY ANSWERS:

31. D 32. B 33. A 34. B 35. B 36. B 37. A

38. D 39. C 40. C

#### PHYSICS ANSWERS:

41. C 42. D 43. 44. A 45. 46. 47. D 48. B

49. D 50. C

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## 2018/2019 POST UTME SCREENING EXERCISE

### SECTION I: ENGLISH LANGUAGE

**Read the following passage carefully and answer the questions 1 to 5.**

Recent literary researches reveal that Nigerians hardly have time to read. In essence the reading culture in Nigeria is now at a low ebb. It's disturbing however, the few Nigerians that reads concentrate more on foreign books than indigenous productions. Most Nigerian authors of novels, story books, fiction and non-fiction series have decried on different occasions, their woes. They were bitter as way most owners of bookshop and publishes treat them. It was gathered that most renowned bookshop's hardly sells books that was writing by indigenous authors. They prefer to stock foreign books.

When contacted by DAILY INDEPENDENCE, the general manager of popular bookstore in Lagos island declared that most of the bookshop prefer to store foreign books because of higher demands for them. The question that borders most Nigerian authors is, while their overseas counterpart are been rewarded with great international honours, why Nigerians are not according them such recognition in their country?

Recently Nigerian novelist Chimamanda Ngozi Adichie, won 2007 orange prize award the literary world's top award for fiction written by women. The award carries a fixed tag of 30,000. It was reported in *publishers weekly*, *half of a yellow sun*, the book that earned her the award was *profoundly gripping*. According to the reviewer the book is a 'transcendent novel' of many descriptive triumphs most notably its diction of impact of war brutalities on peasants and intellectuals alike it's a searing history in fictional form, intensely evocative and immensely absorbing 'Chinua Achebe' father modern African literatures' also won the second ever man booker of the international price of 60,000 with his first novel things fall apart published in 1958, when professor Wole Soyinka won the novel price for literature in 1986, the fame confirmed the relevance of Nigerians in the world of classical excellence when

Bon Ekri won the 1999 booker price with his work, 'The famished road', and the world celebrate Nigeria as the giant of Africa. It was also gathered that most of the publishers hurriedly produced books and in the process marred their good contents. Most of the books are not properly edited and eventually become substandard when compared with foreign products the extent to which books publishing standard have fallen in Nigeria is alarming.

Often Nigerian publishers have been blamed for this it instructive that none of the books mention have been published in Nigeria. It was discovered that most of the student in tertiary institutions depends on dictations from their lecturers or handout. A science lecturer in one of the Nigerian universities who had been a victim of handouts sale scandals, told DAILY INDEPENDENCE the reality campus challenges in relation to books: I was forced to dictate note to students who hung in my every word in the absence of text books in a library that had, to all intent and purpose, stop buying new books when the local currency is devalued. But what other alternative do one have?

- It can be inferred from the passage that\_\_\_\_\_
  - Nigerians have access to foreign books only
  - Nigerians undergraduates do not read text books
  - Nigerians read foreign and indigenous book alike
  - Nigerians read mostly foreign books only
- The reasons for lack of indigenous books in most renowned bookshops, according to the passage, is\_\_\_\_\_
  - Nigerians prefer reading foreign books
  - Foreign books attract more buyers
  - Indigenous books are sometimes not available
  - The low quality of indigenous books.
- The expression....*that earned her the award was profoundly gripping*, as used in the passage means that the book\_\_\_\_\_

- A. Is highly interesting and captures attention
- B. Is of high quality to the writer
- C. Attracts many indigenous and foreign readers
- D. Is widely acknowledge by many authors

4. The university lecturer gives his reason for issuing handouts as \_\_\_\_\_

- A. Lack of teaching aids among students
- B. Low purchasing power
- C. Low quality of books
- D. Lack of sufficient time

5. A suitable title for this passage is \_\_\_\_\_

- A. Nigerian literary readers
- B. Nigerian publishers and international awards
- C. Poor reading culture in Nigeria
- D. Why Nigerian lecturers sell handouts.

**In each of question 6 to 10, choose the option *opposite in meaning to the word(s) or phrase in italics.***

6. *Gregarious* animal can be found in the zoo.

- A. Lonely
- B. Tame
- C. Wild
- D. Various

7. I am *loath* to the assignment.

- A. Unwilling
- B. Waiting
- C. Dying
- D. Willing

8. Only these who are *gullible* fall victim to his trickery

- A. Astute
- B. Courteous
- C. Saucy
- D. Devastated

9. A cool bath in a both weathers can be truly *invigorating*.

- A. Debilitating
- B. Devastating
- C. Disgusting
- D. Unpalatable

10. The witness decided to *conceal* the evidence

- A. Waive
- B. Divulge

- C. Hide
- D. destroy

**In each of question 6 to 10, choose the option *nearest in meaning to the word(s) or phrase in italics.***

11. The party supporters *vilified* the chairman for the role he played in the crises that rocked the party.

- A. Impeached
- B. Condemned
- C. Challenged
- D. Elect

12. Publishing as a business venture has become a *hot potato* in Nigeria

- A. Unacceptable
- B. Unpleasant
- C. Expensive
- D. Profitable

13. The *cynics* feared that the nation's nascent democracy will fail.

- A. Illusionist
- B. Pessimists
- C. Delinquents
- D. Critics

14. The nurse was in favour of *voluntary euthanasia*

- A. A sleeping pill
- B. A major operation
- C. A painless death
- D. A simple operation

15. There was a *glut* of oil on the market

- A. An abundance of
- B. An increase in
- C. A variety of
- D. An accumulation of

## **SECTION II: GENERAL KNOWLEDGE**

16. Gabriel Daniel Fahrenheit was \_\_\_\_\_

- A. A German physicist
- B. Develop the mercury thermometer in 1714
- C. Devised temperature scale
- D. All of the above

17. Excessive secretion from the pituitary gland in the children results in \_\_\_\_\_

- A. Increased height
- B. Retarded growth
- C. Weakening of bones

D. None of the above

18. Free surface of a liquid behave like a sheet and tends to contract to the smallest possible area due to the\_\_\_\_\_

- A. Force of adhesion
- B. Force of friction
- C. Centrifugal force
- D. Force of cohesion

19. Headquarters of United Nations Organization is situated at\_\_\_\_\_

- A. New York city, USA
- B. Hague, Netherland
- C. Geneva, Switzerland
- D. Paris, France

20. Fathometer is used to measure\_\_\_\_\_

- A. Earthquakes
- B. Rainfall
- C. Ocean depth
- D. Sound intensity

### SECTION III: BIOLOGY

21. The breaking down of fats and oils into simpler absorbable compounds is catalysed by the group of enzymes called\_\_\_\_\_

- A. Lipases
- B. Hydrolases
- C. Amylases
- D. Peptidases.

22. The surface of an alveolus in a mammal is well supplied with tiny blood vessels called\_\_\_\_\_

- A. Arterioles
- B. Venules
- C. Arteries
- D. Capillaries

23. The anaerobic fermentation of a glucose molecules yields\_\_\_\_\_

- A. 38 ATP molecules
- B. 2 ATP molecules
- C. Pyruvic acid and alcohol
- D. Water and carbon (IV) oxide

24. The opening of the stomata is controlled by the\_\_\_\_\_

- A. Presence of a pore
- B. Increase in solute concentration in the guard cells
- C. Presence of guard cells
- D. Decrease in solute concentration in the guard cells

25. Thee eggs of bird contain relatively larger quantities of yolk than those of amphibians and reptiles because\_\_\_\_\_

- A. Birds are generally bigger in size
- B. Embryonic development is longer in birds
- C. Those of birds are fertilized internally
- D. Birds laid shelled eggs.

26. Epigeal germination of a seed is characterized by\_\_\_\_\_

- A. More rapid elongation of a hypocotyl than the epicotyl
- B. More rapid elongation of an epicotyl than the hypocotyl
- C. Equal growth rate of both the hypocotyl and epicotyl
- D. Lack of growth of the hypocotyls

27. Nervous control is different from hormonal control in that the former\_\_\_\_\_

- A. Involves only chemical transmission
- B. Is a slower process
- C. Product short-term changes
- D. Has no specific pathway

28. If a nursing mother is not producing enough milk, her hormonal system is probably in deficiency in\_\_\_\_\_

- A. Prolactin
- B. Testosterone
- C. Thyroxine
- D. Insulin.

29. The association between termites and the cellulose-digesting protozoans in their guts is an example of\_\_\_\_\_

- A. Saprophytism
- B. Mutualism
- C. Parasitism
- D. Commensalism

30. The progressive loss of energy at each level in a food chain leads to\_\_\_\_\_

- A. An increase to biomass at each successive level
- B. A decrease in biomass at each successive level
- C. An increase in the number of organisms at each successive level
- D. An increase in the total weight of living matter at each successive level

### SECTION IV: CHEMISTRY

31. Which of the following are structural isomers?

- A. Propanoic acid and propan-1,2- diol
- B. Propanol and propanone
- C. Ethanoic acid propanoic acid
- D. Ethan-1,2-diol and ethanoic acid

32. In the purification of impure sample of ethyl ethanoate synthesized by esterification, concentrated tetraoxocarbonate (IV) solution is used to remove \_\_\_\_\_

- A. Water basic impurities
- B. basic impurities
- C. acidic impurities
- D. ethoxyethane

33. How hydrogen atoms does a single ring cycloalkane have less than the corresponding open chain-alkane?

- A. Two
- B. Three
- C. Four
- D. One

34. Equal moles of ethyne and hydrogen iodide react to give

- A.  $\text{CH}_2 = \text{CH}_2$
- B.  $\text{CH}_2 = \text{CH}_1$
- C.  $\text{CH}_3 = \text{CH}_3$
- D.  $\text{CH}_2 = \text{CH}_1$

35. A substance that is used as a ripening agent fruit is \_\_\_\_\_

- A. Ethane
- B. Propene
- C. Methane
- D. Butane

36. When water boilers are used for a long period of time, the solid substances left behind as scale are \_\_\_\_\_

- A. Magnesium trioxosilicate (IV) and rust
- B. Magnesium trioxosilicate (IV) and calcium trioxosulphate (VI)
- C. Clay and magnesium trioxosilicate (IV)
- D. Clay and rust

37. The solubility curve shows the variation of solute concentration with \_\_\_\_\_

- A. Volume
- B. Temperature
- C. Vapour density
- D. Pressure

38. Kerosene is commonly used to remove the red colour stain of palm oil from cloth because it \_\_\_\_\_

- A. Help to spread the oil over a larger surface area
- B. Reacts with the oil surface to form an odourless compound
- C. Makes the oil to evaporate easily by dissolving it
- D. Helps to dilute the oil and reduce its colour

39. The gas that is the most dangerous pollutant to human is \_\_\_\_\_

- A. Sulphur (IV) oxide
- B. Carbon (IV) oxide
- C. Nitrogen (II) oxide
- D. Hydrogen sulphide

40. How many moles of limestone will be required to produce 5.6kg of  $\text{CaO}$ ?

- A. 0.20mol.
- B. 0.10mol.
- C. 1.12mol.
- D. 0.56mol.

[Ca = 4, C = 12, O = 16]

#### SECTION V: PHYSICS

41. The percentage of the original nuclei of a sample of a radioactive substance left after 5 half-life is \_\_\_\_\_

- A. 8%
- B. 5%
- C. 3%
- D. 1%

42. The particle that is responsible for nuclear fission in a nuclear reactor is \_\_\_\_\_

- A. Neutron
- B. Proton
- C. Electron
- D. Photon

43. Which of the following statement is true of the properties of a moving coil galvanometer?

- A. The coil has a small area
- B. There are strong hair springs to give a large control couple.
- C. There is strong permanent magnet to give high magnetic flux
- D. It has a small number of turns of coil.

44. A bead travelling on a straight wire is brought to rest at 0.2m by friction. If the

mass of the bead is 0.01kg and the coefficient of friction between the bead and the wire is 0.1, determine the work done by the friction

- A.  $2 \times 10^{-4}$ J
- B.  $2 \times 10^{-3}$ J
- C.  $2 \times 10^1$ J
- D.  $2 \times 10^2$ J

[ $g = 10 \text{ ms}^{-1}$ ]

45. A hose of cross-sectional area  $0.5\text{m}^2$  is used to discharge water from a water tanker at a velocity of  $60 \text{ ms}^{-1}$

in 20s into a container. If the container is filled completely, the volume of the container is

- A.  $240\text{m}^3$
- B.  $600\text{m}^3$
- C.  $2400\text{m}^3$
- D.  $6000\text{m}^3$

46. Water does not drop through an open umbrella of silk material unless the inside of the umbrella is touched. This is due to \_\_\_\_\_

- A. Capillarity
- B. Osmotic pressure
- C. Viscosity
- D. Surface tension

47. A piece of stone attached to one end of a string is whirled round in a horizontal circle and the string suddenly cuts. The stone will fly off in a direction

- A. Perpendicular to the circular path.
- B. Parallel to the circular path.
- C. Tangential to the circular path.
- D. Toward the centre of the circle

48. A 90cm uniform lever has a load of 30N suspended at 15cm from one of its ends. If the fulcrum is at the centre of gravity, the force that must be applied at its other end to keep it in horizontal equilibrium is \_\_\_\_\_

- A. 15N
- B. 20N
- C. 30N
- D. 60N

49. By what factor will the size of an object placed 10cm from a convex lens be increased if the image is seen on a screen placed 25cm from the lens?

- A. 15.0
- B. 2.5
- C. 1.5

D. 0.4

50. Thermal equilibrium between two objects exist when \_\_\_\_\_

- A. The temperatures of both objects are equal.
- B. The quantity of heat in both objects is the same.
- C. The heat capacities of both objects are the same.
- D. One object loses heat continuously to the other.

#### ENGLISH ANSWERS:

1. D 2. D 3. C 4. B 5. A 6. C 7. D 8. B 10. B  
11. A 12. D 13. A 14. C 15. A

#### GENERAL KNOWLEDGE ANSWERS:

16. D 17. B 18. D 19. A 20. C

#### BIOLOGY ANSWERS:

21. A 22. D 23. B 24. C 25. B 26. A 27.  
28. A 29. B 30. B

#### CHEMISTRY ANSWERS:

31. B 32. C 33. A 34. D 35. A 36. A 37. B  
38. D 39. D 40. B

#### PHYSICS ANSWERS:

41. C 42. A 43. C 44. B 45. 46. D 47. C  
48. B 49. B 50. A

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