



**PrepsNG**  
***Learning Center***

**UNIVERSITY OF CALABAR**

**POST UTME PAST QUESTIONS FOR SCIENCE**

# 2005/2006 POST UTME QUESTIONS

**TIME ALLOWED: 1 HOUR**

## BIOLOGY

- All living organisms
  - photosynthesize
  - respire
  - move
  - feed
- In which of these associations is much harm done to one of the partners?
  - symbiosis
  - epiphytism
  - commensalism
  - parasitism
- A cotton bulb stores its food in the
  - stem
  - leaves
  - roots
  - cotyledon
- The character producing factors in living organisms are
  - chromosomes
  - alleles
  - chromatids
  - genes
- Exo – skeleton is not found in the
  - maggot
  - mosquito larva
  - earthworm
  - caterpillar
- Blood clotting is initiated by
  - leucocytes
  - platelets
  - haemolymph
  - haemoglobin
- How many nuclei are found in a pollen tube during fertilization?
  - 2
  - 3
  - 5
  - 7
- Denitrifying bacteria in the nature liberate gaseous nitrogen directly from
  - ammonium salt
  - soil nitrate
  - thunderstorms
  - plant and animal proteins
- Leaching is
  - washing away of humus from the soil surface
  - reduction of soil aeration by pressure
  - soil erosion by means other than rainfall
  - washing out of chalk and limestone from upper layers of soil by heavy rains
- The lumbar vertebra when compared with thoracic vertebra has a \_\_\_\_\_
  - longer neutral spine
  - wider neutral spine
  - thicker centrum
  - shorter transverse process
- Hydra removes unwanted food by
  - passing it through the anus
  - passing it through the amount
  - meant of a contractile vacuole
  - egesting it through the body surface
- Which of the following characteristics is common to amoeba and paramecium
  - oral groove
  - trichocyte
  - contractile vacuole
  - cilia
- The most recently evolved structure in animal is the
  - feather
  - cilium
  - scale
  - Hair
- The legs and beak of an egret resemble those of the heron because they
  - occupy similar niche
  - are both birds
  - both feed on fishes
  - occupy the trophic level
- Which of the following is an adaptation of forest species
  - few stomata

- B. thick bark
- C. reduced leaves
- D. buttress roots

16. A certain savanna grasshopper changes colour from green during raining season to black during the dry season and black after the dry season bush fires. The reason for these colour changes is that the
- A. grasshopper is getting older
  - B. grasshopper is avoiding predation
  - C. environmental temperature is changing
  - D. grasshopper is frequently moulting
17. A tall plant crossed with a dwarf one produces offspring of which half are tall and half are dwarf, what are the genotype of the parents?
- A. TT, TT
  - B. Tt, tt
  - C. TT, tt
  - D. Tt, Tt
18. The hydrometer is used for measuring
- A. relative humidity
  - B. specific gravity
  - C. rainfall
  - D. salinity
19. The function of the fluid-filled pericardium is to
- A. supply the heart with oxygen and nutrients
  - B. reduce intensity of the pumping action of the heart
  - C. reduce the friction caused by the pumping movement of the heart
  - D. prevent disease organisms from attacking the heart
20. When a peacock display its colourful features, it is
- A. courting a female
  - B. ready to fight
  - C. protecting itself from predators
  - D. protecting its mate from predators.

#### USE OF ENGLISH:

**INSTRUCTION: Shade the correct answer in the box provided on the answer sheet**

#### SECTION A:

**INSTRUCTION: Choose the option that best explains the information conveyed in the sentence.**

1. The government warns that drink-driving is punishable under the law
  - A. a drunkard driving can be punished
  - B. driving while drunk is an offence
  - C. driving while drinking is an offence
  - D. drinking and driving is an offence.
  
2. The investigators stated clearly that they had reached 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 had evidence to sentence the suspects 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.
  
3. Adamu's father is a key figure in that ministry
  - A. the ministry trusts adamu's father as a central figure
  - B. adamu's father is a figurehead in the ministry
  - C. adamu's father's position is essential in the ministry
  - D. adamu's father keeps the key to the ministry
  
4. The conference is biennial
  - A. the conference is held twice two years
  - B. the conference is held once every other year
  - C. the conference is held once four years
  - D. the conference lasts for two years.
  
5. Basse is as hard as nails
  - A. Basse is very strong
  - B. Basse is very brave
  - C. Basse is determined
  - D. Basse is unsympathetic
  
6. Ene Henshaw's death is monumental loss to the literary world
  - A. Ene Henshaw is a monument
  - B. Ene Henshaw's death will have grave consequences to creative writing
  - C. Ene Henshaw's death is a loss to the world
  - D. Ene Henshaw's death is a literary fact.

**SECTION B:**

**INSTRUCTION: Choose the option opposite in meaning to the word(S) phrase in italics**

7. Only those who are *gullible* fall victim to his trickery  
 A. saucy  
 B. devastated  
 C. courteous  
 D. Astute
8. He is well known *inordinate* ambition  
 A. excessive  
 B. passionate  
 C. moderate  
 D. sound
9. Students could be *timid*  
 A. friendly  
 B. bold  
 C. covetous  
 D. pugnacious
10. The witness decided to *conceal* the evidence  
 A. divulge  
 B. hide  
 C. destroy  
 D. pugnacious
11. The members of the congregation were *inspired* by the sermon  
 A. bewitched  
 B. enthralled  
 C. disenchanting  
 D. disoriented
12. Agbenu was *ecstatic* about her result  
 A. disappointed  
 B. sad  
 C. pessimistic  
 D. mad
13. The labour leader's *recalcitrant* stance was applauded  
 A. stubborn  
 B. flexible  
 C. uncompromising  
 D. well-informed
14. A cool bath in a hot weather can be truly *invigorating*  
 A. devastating  
 B. unpalatable  
 C. debilitating  
 D. disgusting

15. I am *loath* to do assignment  
 A. willing  
 B. unwilling  
 C. waiting  
 D. dying

**SECTION C:**

**INSTRUCTIONS: Fill each gap with the appropriate option from the list provided**

16. \_\_\_\_told of his impending arrival, I worked hard to make his short stay very comfortable  
 A. have being  
 B. having been  
 C. having being  
 D. have been
17. The weather is probably \_\_\_\_appealing for people who live in Jos \_\_\_\_for foreigners  
 A. no less/than  
 B. more/as  
 C. as much/as  
 D. at least as/but
18. To tried to \_\_\_\_all memory of his dead father  
 A. recall  
 B. obliterate  
 C. eulogize  
 D. obstruct
19. Is imposing edifice \_\_\_\_a fortune to build  
 A. had costed  
 B. costed  
 C. cost  
 D. have cost
20. One quarters of the hostels \_\_\_\_have been painted and three quarters of the students moved in  
 A. has/has  
 B. have/has  
 C. have/have  
 D. has/have.

**PHYSICS**

1. Which of the following represents the correct precision if the length of a piece of wire is measured with a meter rule  
 A. 34.0mm

- B. 35.0mm
- C. 35.00mm
- D. 35.01mm

2. If the refractive index of glass is 1.5, what is the critical angle at the air-glass interface?

- A.  $\sin^{-1} \sqrt{2}$
- B.  $\sin^{-2/3}$
- C.  $\sin^{-3/4}$

3. An a.c circuit of e.m.f 12v has a resistor of resistance 8 ohms connected in series to an inductor of inductive resistance  $16\Omega$  and a capacitor of inductive  $10\Omega$ . The current flow in the circuit is

- A. 1.4A
- B. 1.2A
- C. 12.0A
- D. 14.0A

4. An object of mass 400g and density  $600\text{kgm}^{-3}$  is suspended with a string so that half of its immersed in paraffin of density  $900\text{kgm}^{-3}$ , the tension in the string is

- A. 1.0N
- B. 3N
- C. 4.0N
- D. 0.N

5. The thermometric property of the thermocouple is that, it's

- A. e.m.f changes with temperature
- B. resistance changes with temperature
- C. volume changes with temperature
- D. pressure changes with resistance

6. Which of the following is the exclusive property of a transverse wave?

- A. diffraction
- B. refraction
- C. compression
- D. polarization

7. If the maximum voltage across a 100-ohms resistance is 20V, then the maximum power can dissipate is

- A. 5.00W
- B. 4.00W
- C. 2.00W
- D. 0.25W

8. A body of mass 2kg moving vertically upwards has its velocity increased uniformly from 10m/s in 4s. neglecting air resistance, calculate the upward vertically force acting on the body

- A. 15N
  - B. 20N
  - C. 35N
  - D. 45N
- ( $g = 10\text{ms}^{-2}$ )

9. One of the features of the fission process is that

- A. its products are not radioactive
- B. it leads to chain reaction
- C. neutrons are not released
- D. the sum of the masses of the reactants equals the sum of the masses of the products

10. Total internal reflection occurs when light moves from

- A. air to water
- B. water to glass
- C. a dense medium to a less dense medium
- D. a less dense medium to a dense medium

11. The main reason for making cover of a vacuum flask airtight is to prevent heat lose by

- A. conduction
- B. evaporation
- C. radiation
- D. convection

12. Which of the following quantities are scalar

- I. Electrical potential
- II. Torque
- III. Momentum
- IV. Kinetic energy

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

13. Which of the following media allow the transmission of sound wave through the

- I. air
- II. Liquid
- III. Solids

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

14. The colour seen in soap bubbles are due to \_

- A. interference
- B. dispersion

- C. diffraction  
D. refraction

15. A transistor is used in the amplification of signals because it

- A. allows doping  
B. contains electron and hole carrier  
C. consumes a lot of powers  
D. controls the follow of current

16. The property that is propagated in a travelling wave is

- A. amplitude  
B. energy  
C. wavelength  
D. frequency

17. An empty 60ltr petrol tank has a mass of 10kg. its mass when full of fuel of relative density 0.72kgm

- A. 7.2kg  
B. 33.2kg  
C. 43.2kg  
D. 53.2kg

18. A patient with a sight defect has a least distance of distinct vision of 150cm for him to be able to read material placed at a distance of 25cm, what is the focal length of the glasses he should wear?

- A. 15.0cm  
B. 17.6cm  
C. 21.4cm  
D. 30.0cm

19. Energy losses through eddy currents are reduced by using

- A. insulated soft iron and wire  
B. low resistance wires  
C. few turns of wire

20. The particle when  ${}_{38}^{90}\text{K}$  decays to  ${}_{38}^{88}\text{K}$

- A. beta  
B. alpha  
C. gamma  
D. electron.

## ANSWERS TO 2005/2006 QUESTIONS

### BIOLOGY:

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

### USE OF ENGLISH

#### SECTION A:

1. C 2. C 3. B 4. D 5. D 6. B

#### SECTION B:

7. C 8. C 9. B 10. A 11. C 12. B 13. B 14. C  
15. A

#### SECTION C:

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

### PHYSICS

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

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# 2006/2007 UNICAL POST UTME QUESTIONS

## PHYSICS

1. A particle in circular motion performs 30 oscillations in 6 seconds, its angular velocity is \_\_\_\_\_  
 A.  $10\pi \text{ radS}^{-1}$   
 B.  $5\pi \text{ radS}^{-1}$   
 C.  $6 \text{ radS}^{-1}$   
 D.  $5 \text{ radS}^{-1}$
2. If the total force acting on a particle is zero, the linear momentum will  
 A. increase then decrease  
 B. be constant  
 C. increase  
 D. decrease
3. Water is a poor thermometric liquid because it using a cylindrical lens?  
 A. astigmatism  
 B. presbyopia  
 C. chromatic aberration  
 D. myopia
4. Thermal equilibrium between two objects exists when  
 A. the heat capacities of both objects are the same  
 B. one object losses heat continuously to the other  
 C. the temperature of both objects are equal  
 D. the quantity of heat in both objects is the same
5. An electric iron is rated 1000W, 230V. what is the resistance of its element?  
 A. 57.6Q  
 B. 55.9Q  
 C. 52.9Q  
 D. 51.9Q
6. The particle that is responsible for nuclear fission in a nuclear reactor is  
 A. electron  
 B. photon  
 C. neutron  
 D. proton
7. The ray which causes gas molecules to glow is known as  
 A. molecular ray  
 B. gamma ray  
 C. anode ray  
 D. cathode ray
8. The resistance of a piece of wire length 20m and cross-sectional area  $8 \times 10^{-6}$  is  
 A. 1.0 ohms  
 B. 10.0 ohms  
 C. 0.50 ohms  
 D. 5.0 ohms
9. Satellite communication network makes use of  
 A. infra-red ray  
 B. sound wave  
 C. visible light  
 D. radio wave
10. If two inductors of inductances 3H and 6H are arranged in series, the total inductance is  
 A. 18.0H  
 B. 9.0H  
 C. 2.0H  
 D. 0.5H
11. Which of the following is a set of vectors  
 A. force, mass and moment  
 B. acceleration, velocity and moment  
 C. mass, weight and density  
 D. mass, volume and density
12. Two points on a velocity time graph have a co-ordinate (5s, 10m/s) and (20s, 20m/s), calculate the mean acceleration between the two points  
 A.  $0.67\text{ms}^{-2}$   
 B.  $0.83\text{ms}^{-2}$   
 C.  $1.50\text{ms}^{-2}$   
 D.  $2.00\text{ms}^{-2}$
13. Which of the following devices are used to measure pressure  
 I. aneroid  
 II. Barometer  
 III. Hydrometer  
 IV. Manometer  
 A. I and II only  
 B. II and III only  
 C. III and IV only  
 D. I and V only
14. When light is incident on an object which is magenta in colour, which of the following colours would be absorbed?  
 A. red and blue  
 B. green only

- C. red and green
- D. red only

15. Which of the following is a vector

- A. electric charge
- B. electric field
- C. electric potential difference
- D. electric capacitance

16. In which of the following is surface tension important?

- A. the floating of ship in water
- B. the floating of a dry needle in water
- C. the floating of a balloon in air
- D. the diffusion of sugar solution across a membrane

17. Which of the following is the most suitable for use as an alt/meter

- A. mercury barometer
- B. a fortin barometer
- C. a mercury manometer
- D. an aneroid barometer

18. In which of the following is surface tension important?

- A. the floating of ship in water
- B. the floating of a dry needle in water
- C. the floating of a balloon in air
- D. the diffusion of sugar solution across a membrane

19. Which of the following obeys Ohm's law?

- A. glass
- B. diode
- C. all electrolytes
- D. all metals

20. Which of the following obeys Ohm's law?

- A. glass
- B. diode
- C. all electrolytes
- D. all metals

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# 2008/2009 BIOLOGY POST UTME QUESTIONS

1. Amoeba moves by means of \_\_\_\_\_
  - A. cilia
  - B. flagella
  - C. pseudopodia
  - D. swimmerets
  - E. setae
  
2. Which of these tissues serves the function of support and water conduction
  - A. parenchyma
  - B. collenchyma
  - C. sclerenchyma
  - D. xylem
  - E. phloem
  
3. Which of these is the terminal portion of the alimentary canal of a mammal?
  - A. oesophagus
  - B. stomach
  - C. rectum
  - D. colon
  - E. appendix
  
4. An organism which lives on the remains of a dead plant is
  - A. an endoparasite
  - B. a saprophyte
  - C. a commensal
  - D. a symbiont
  - E. an ectoparasite
  
5. Which of the substances listed below is a trace element for plants?
  - A. potassium
  - B. sodium
  - C. copper
  - D. phosphate
  - E. nitrate
  
6. The movement of molecules from a region of higher concentration to the one of lower concentration is?
  - A. diffusion
  - B. transpiration
  - C. osmosis
  - D. translocation
  - E. plasmolysis
  
7. The blood vessel which carries digested food from the small intestine to the liver is the \_\_\_\_\_
  - A. renal vein
  - B. renal artery
  - C. hepatic artery
  - D. hepatic portal vein
  - E. celiac artery
  
8. The maize grain is regarded as a fruit and not a seed because
  - A. it is covered by a sheath of leaves
  - B. the Testa and fruit wall fuse after fertilization
  - C. it has both endosperm and cotyledon
  - D. it has coleorhiza and coleoptile
  - E. the pericarp and seed coat are separate
  
9. Grasses – grasshoppers – lizards – snakes – hawks. In the food chain, the organisms which are the least in number are
  - A. grasses
  - B. grasshoppers
  - C. lizards
  - D. snakes
  - E. hawks
  
10. Magnesium is utilized in the formation of
  - A. ATP
  - B. glucose
  - C. amino acids
  - D. chlorophyll
  - E. fats
  
11. Which of these is not true? Grasses in the above food chain
  - A. trap all the sun energy
  - B. trap a small percent of the sun energy
  - C. are primary producers
  - D. contain chlorophyll
  
12. Insects show considerable powers of water conservation. This is due to the fact that
  - A. the chitin is impregnated with tanned proteins
  - B. nitrogenous waste is eliminated as urea
  - C. chitin is impermeable to water
  - D. the Malpighian tubules are impermeable to water
  - E. the cuticle is covered with wax
  
13. Root hairs have their origin from
  - A. endodermis
  - B. pericycle
  - C. cortex
  - D. epidermis
  - E. xylem

## ANSWERS ON BIOLOGY 2008/2009

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

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14. The element nitrogen is utilized in \_\_\_\_  
A. formation of ATP  
B. formation of glucose  
C. formation of amino acids  
D. photosynthesis  
E. none of the above
15. In most true terms, sporangia are grouped into  
A. indusum  
B. fronts  
C. prothalli  
D. sori
16. In the reproduction of mosses, water is essential because  
A. they live in moist habitats  
B. they cannot reproduce without water  
C. the male gametes must swim to fertilize the ovum  
D. they produce spores
17. In tapeworm, the two structures that run throughout the length of the body are the \_\_\_\_  
A. nerve cord and the excretory duct  
B. sperm duct and the nerve cord  
C. genital pore and the excretory duct  
D. sperm cord and the genital pore
18. Which of the following is NOT a characteristic of snail?  
A. bilateral symmetry  
B. chitinous exoskeleton  
C. muscular foot  
D. soft unsegmented body in mantle
19. In the life history of a butterfly, destruction of crops is caused by the  
A. maggot  
B. nymph  
C. caterpillar  
D. pupa
20. The correct sequence of tissues in the anatomy of a young dicotyledonous stem from the inside to the outside is  
A. pith, phloem, cambium, xylem, collenchyma and epidermis  
B. xylem, phloem, cambium, cortex, endodermis, collenchyma and epidermis  
C. pith, xylem, cambium, phloem, collenchyma, parenchyma and epidermis  
D. phloem, xylem, cambium, cortex, endodermis, collenchyma and epidermis

# 2008/2009 CHEMISTRY POST UTME QUESTIONS

## UNIVERSITY OF CALABAR, CALABAR 2008/2009 POST UTME SCREENING

### CHEMISTRY

1. If  $100\text{cm}^3$  of hydrogen diffused through a porous pot in 1.0 second, how long will it take the same volume of oxygen to diffuse through the same pot under the same condition? (H = 1.0, O = 16.0)

- A. 2.5s
- B. 4.0s
- C. 16.0s
- D. 25.0s

2. Which of the following acids is dibasic?

- A. hydrochloric acids
- B. trioxosulphate (IV) acid
- C. dioxo nitrate (III) acid
- D. ethanoic acid

3. Bees inject acidic substance when they sting. Which of the following chemical could be used to treat bee stings

- A.  $\text{CH}_3\text{COOH}$
- B.  $\text{NaHCO}_3$
- C.  $\text{CH}_5\text{OH}$
- D.  $\text{H}_2\text{O}_2$

4. Which of the following salts can be prepared by reacting the metal with dilute  $\text{H}_2\text{SO}_4$

- A.  $\text{CuSO}_4$
- B.  $\text{MgSO}$
- C.  $\text{BaSO}_4$
- D.  $\text{PbSO}_4$

5. Which of the following solutions will give a dilute tetraoxosulphate (IV) acid?

- I. Lead (II) trioxonitrates (VI)
- II. Barium chloride solution
- III. Sodium chloride solution

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

6. Substance Q reacts with cold water to form a solution which turns red litmus blue. Substance Q could be

- A. zinc
- B. phosphorus

- C. lead
- D. sodium

7. What term is used to describe an oxide whose aqueous solution turns blue litmus red?

- A. a strong electrolyte
- B. acid anhydride
- C. amphoteric oxide
- D. basic oxide

8. Which of the following substances could be responsible for the banana taste of a food flavour

- A. methylbenzene
- B. butanol
- C. ethanol
- D. penthleoanoate

9. The reaction of vegetable oil with a solution of wood ash is

- A. saponification
- B. neutralization
- C. hydrogenation
- D. Esterification

10. What process does the following equation represent  $(\text{C}_6\text{H}_{10}\text{O})_n + n\text{H}_2\text{O} \rightarrow \text{NC}_6\text{H}_{12}\text{O}_6$

- A. polymerization of glucose
- B. hydrolysis of starch
- C. fermentation of sugar
- D. dehydration of carbohydrate

11. Which of the following equimolar solutions will have the highest pH?

- A.  $\text{CH}_3\text{COONa}$
- B.  $\text{NaOH}$
- C.  $\text{HCl}$
- D.  $\text{NH}_4\text{OH}$

12. Which of the following ions requires the largest quantity of electricity for discharge at an electrode?

- A. 4.0moles of C
- B. 3.0moles of  $\text{Na}^+$
- C. 2.5moles of  $\text{Cu}^{3+}$
- D. 2.0moles of  $\text{Al}^{3+}$

13. Phenolphthalein in acidic solution is

- A. red
- B. orange
- C. colourless
- D. yellow

14. When iron is exposed to moisture and it rusts, the value of  $\Delta G$  for the reaction is

- A. neutral
- B. zero
- C. positive
- D. negative

15. When sulphur (IV) oxide is passed into a solution of sodium hydroxide for a long time, it eventually produces a solution of

- A.  $\text{NaHSO}_4$
- B.  $\text{Na}_2\text{SO}_3$
- C.  $\text{NaHSO}_3$
- D.  $\text{Na}_2\text{SO}_4$

16. The decolourization of the purple colour of tetraoxomanganate (VII) ions is a test for?

- A. alkenes
- B. alkanols
- C. alkanals
- D. alkanes

17. Which of the following are structural isomers?

- A. propanoic acid and propan 1,2 dio
- B. propanal and propanone
- C. ethanoic acid and propanoic acid
- D. Ethan 1,2 diol and ethanoic acid

18. In the purification of impure samples of ethyl ethanoate synthesized by esterification, concentrated sodium trioxocarbonate (iv) solution is used to remove?

- A. water
- B. basic impurities
- C. acid impurities
- D. ethoxyethane

19. The dissolution of common salt in water is a physical change because

- A. the salt can be obtained by crystallization
- B. the salt can be recovered by the evaporation of the water
- C. heat is not generated during mixing
- D. the solution will not boil at  $100^\circ\text{C}$

20. Which of the following substance is a mixture?

- A. sulphur powder
- B. bronze
- C. distilled water
- D. ethanol.

## ANSWERS ON CHEMISTRY 2008/2009

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

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

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

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**2008/2009 MATHEMATICS POST UTME QUESTIONS**

1. If  $Y^x = XY - Y^2$ , evaluate  $(2x + y) \times (y + 2x)$

- A.  $4xy$   
B.  $4x^2$   
C. 0

2. Evaluate  $x^2 + 1/x^2$  when  $x = 1/x^{-5}$

- A. 24  
B. 25  
C. 26

3. If  $(2x - 1)(2x + 3) + (2x + 1) = ax^2 + bx + c$ , find a, b, c

- A. 0, 6, 6  
B. 8, 0, 0  
C. 8, 0, 6  
D. 8, 8, 6

4. If  $a = (a, b, c)$ ,  $b = (a, b, d, e)$ ,  $C = (a, b, c, d, e, e)$ . find AUBUC

- A.  $(a, b, c, d, e)$   
B.  $(a, b, c, d)$   
C.  $(a, b, c)d$   
D.  $(a, b, d, e)$

5. If  $p - 2g + 1 = g + 3p$  and  $p - 2 = 0$ , find g

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

6. Evaluate  $\log_5 [5^2 \times (25)^1 \times (125)^{2/3}]$

- A. -1.2  
B. -2,0  
C. 1.0  
D. 6.0

7. Express  $4^2 \times (16)^2 \times (64)^3$  in the power of 16

- A.  $(16)^{17/3}$   
B.  $(16)^{7/2}$   
C.  $(16)^{1/2}$   
D.  $(16)^{7/3}$

8. Rationalize  $\frac{2+1}{2-1}$

- A. -3  
B.  $3 + 22$   
C.  $3 - 22$   
D.  $-d - 22$

9. Simplify  $(0.3 \times 10^9)(0.4 \times 10^7)$ , leaving your answer in standard form

- A.  $1.2 \times 10^{13}$   
B.  $1.2 \times 10^{-16}$   
C.  $1.2 \times 10^{-15}$   
D.  $1.2 \times 10^{-5}$

10. Evaluate  $202^2$  base three  $11222^1$  base three

- A. 21120  
B. 211121  
C. 210110  
D. 102122

11. If  $(1/4)(2) = 1$ , find y

- A. -2  
B.  $-1/2$   
C.  $1/2$   
D. 2

12. In the diagrams, xyz is similar to pro,  $/xy/ = 5\text{cm}$ ,  $/xz/ = 3.5\text{cm}$  and  $/pr/ = 8\text{cm}$ . find  $/pq/$

- A. 5.6cm  
B. 11.2cm  
C. 11.4cm  
D. 28.0cm

13. What is the value of a solid cylinder of diameter 7cm and height 7cm?

- A. 38.5cm  
B.  $77\text{cm}^3$   
C. 259.5cm  
D.  $1078\text{cm}^3$

14. In the diagram, KS is a tangent of the circle 24. To the circle centre O at R and  $f\angle ROQ = 800$ . Find  $\angle QRS$

- A. 900  
B. 800  
C. 500  
D. 400

19. Given the sets  $A = (2, 4, 6, 8)$  and  $B = (2, 3, 5, 9)$ , if a number is selected at random from each of the two sets, what is the probability that their product is odd?

- A. 1  
B.  $3/4$   
C.  $1/4$   
D. 0

20. The 1st term of an A.P is equal to thrice the common different. What is the sixth term of the A.P if the common different are 8?

- A. 64

- B. 48  
C. 43  
D. 24

21. Calculate the distance between the points  $(a, 3)$  and  $(-a, 2)$

- A.  $2a + 1$   
B.  $4a^2 + 1$   
C.  $4a^2 - 1$   
D.  $2a - 1$

22. Find the equation of the straight line which passes through the point  $(-2, 3)$  and is parallel to  $7x - y - 6 = 0$

- A.  $y = 7x + 17$   
B.  $y = 7x - 17$   
C.  $y = 7x - 17$   
D.  $y = 7x + 17$

23. Find the sum of the roots of the equation  $2z^2 + 3z - 90$

- A. -18  
B. -6  
C.  $-9/2$   
D.  $-3/2$

24. Differentiate  $y = (3x + 5)^{-1/2}$

- A.  $1/2(3x + 5)^{1/2}$   
B.  $1/2(3x + 5)^{-1/2}$   
C.  $-3/2(3x + 5)^{3/2}$   
D.  $2/2(3x + 5)^{-1/2}$

25. Given two function  $f:R \rightarrow R$  and  $g:R \rightarrow R$  defined by  $f(x) = x^2 + 1$  and  $g(x) = x + 3$ , find the fog

- A.  $x^2 + 6x + 10$   
B.  $x^2 + 4$   
C.  $x^2 x + 4$   
D.  $x^2 x + 10$

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## ANSWERS ON MATHEMATICS 2008/2009

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

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## 2009/2010 USE OF ENGLISH POST UTME QUESTIONS

**INSTRUCTION: Attempt all questions.**  
**Time: 1 HOUR**

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

- For us to succeed in this task all hands must be on deck. This means that everybody
  - should push with his hands
  - will have to place his hands on the deck
  - must cooperate
  - should take a test to qualify
- Kate was at home with all the questions asked by the examiner. This means that Kate was \_\_\_\_\_
  - familiar with the questions
  - went home with the questions
  - prepared to go home with the question
  - conceited about the question
- Mike flies off the handle each time there is an argument. This means
  - mike holds the door handle when he argues
  - mike allows the handle to fly
  - mike easily loses his anger
  - mike can cope with any argument

**Complete the following sentences with the right option from the words supplied after each sentence.**

- When the fire broke out in the hostel, students in \_\_\_\_\_ rushed out in all direction
  - crisis
  - panic
  - haste
  - hurry
- Astronomers keep a close watch of the night sky in order not to miss the \_\_\_\_\_ appearances of some star
  - parallel
  - periodic
  - regular
  - constant

**Choose the word or phrase from option A-D which has the nearest meaning to the underlined word or words in each sentence.**

- My mother has refused to come to live in Lagos because she prefers the tranquil life in the village to the hotly burly of the city
  - sweet
  - prosperous
  - peaceful
  - decent
- A lorry larger than an elephant was struck on the bridge
  - as large as an elephant
  - carrying an elephant
  - that looked like an elephant
  - of enormous proportions

**Choose the option that best completes the sentence**

- The dentist found that his patient's tooth- \_\_\_\_\_
  - have long decayed
  - have long been decayed
  - have long being decayed
  - had long decayed
- In order to catty out the necessary examination, the dead body was
  - extracted
  - exhumed
  - extradited
  - expelled
- He went abroad with a view \_\_\_\_\_ a business partner
  - to fund
  - to funding
  - to be funding
  - to have funded

### ANSWERS ON ENGLISH LANGUAGE 2009/2010

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

# 2009/2010 MATHEMATICS POST UTME QUESTIONS

1. Evaluate  $\log_3 27 + 2\log_3 9 - \log_3 54$
3. Divide  $100001_2$  by  $11_2$ 
  - A.  $1101_2$
  - B.  $1011_2$
  - C.  $111_2$
  - D.  $1001_2$
4. A man borrows ₦750 and agrees to pay simple interest at 4% per annum. After 4 months he pays back ₦400. Calculate the amount he still owing
  - A. ₦300
  - B. ₦370
  - C. ₦380
  - D. ₦400
5. For what values of  $y$  is the expression  $z + Y/y^2 + 5y - 24$  undefined?
  - A. -3 and 1
  - B. 2 and 1
  - C. -1 and -3
  - D. 3 and -8
6. Evaluate  $x^2/x^3 + 1$  when  $x - 1/x = 5$ 
  - A. 27
  - B. 26
  - C. 25
  - D. 24
7. If  $x$  varies inversely as  $xz$  and  $x = 4$  when  $y = 2$ ,  $y = 9$  and  $z = 4$ , then  $x$  is equal to?
  - A.  $1/9$
  - B.  $3/8$
  - C. 9
  - D.  $2/9$
8. If  $3x + 2y = 6$  and  $5x + 2y = 12$ , find  $x-y$ 
  - A. 6
  - B. -3
  - C. 3
  - D. -6
9.  $X-5$  and  $x+3$  are factors of  $x^2 - kx - 15$ . What is the value of  $k$ ?
  - A. -8
  - B. -5
  - C. 3
  - D. -6
10. If  $y = x\sin x$  find  $d^2y/dx$ 
  - A.  $2\cos x - x\sin x$
  - B.  $\sin x + x\cos x$
  - C.  $3\sin x - x\cos x$
  - D.  $x\sin x - 2\sin 2\sin x$
11. The limit of  $(x) = x^3 - 1 + x/x^2 + 1$  as  $|x| = 0$ , then  $l$  is?
  - A. 0
  - B. 1
  - C. 2
  - D. -1
12. Find the value of  $x$  for which the function  $f(x) = x^3 - 2x^2 - 4x$  has a maximum value
  - A. 1
  - B. -1
  - C.  $2/3$
  - D.  $-2/3$
13. Given  $ab = ab - b$  and  $a = (a + b)$ ;  $b = (a - b)$ . evaluate  $(a + b)(a - b)$ 
  - A.  $b(a + b)$
  - B.  $2b(a - b)$
  - C.  $2(a - b)$
  - D.  $2(a + b)$
14. Given that  $\cos^2 x + \sin^2 x = 1$ , evaluate  $(\sin x + \cos x)/(\operatorname{cosec} x)(\sec x)$ 
  - A. 2
  - B. 2
  - C. -1
  - D. 1
15. The bearing of a point from another point A is  $060^\circ$  while the bearing of C from B is  $130^\circ$ . If C is directly east of A and the distance AB is 10m while the distance BC is 15m. what is the distance AC?
  - A. 13.72m
  - B. 12.62m
  - C. 11.32m
  - D. 12.20m
17. Two parallel sides of a trapezium are 4cm and 8cm and are separated by a distance of 5cm. find the area of the trapezium
  - A.  $30\text{cm}^2$
  - B.  $45\text{cm}^2$
  - C.  $52.1\text{cm}^2$
  - D.  $32\text{cm}^2$
19. What is the coordinate of the midpoint of a line AB given that  $A = (2, 4)$  and  $B = (1, -4)$



- A.  $\frac{1}{2}, \frac{1}{2}$   
 B.  $-\frac{1}{2}, -4$   
 C.  $-\frac{1}{2}, -\frac{1}{2}$   
 D.  $\frac{1}{2}, 4$

20. The line PQ ; P = (2, 4), Q = (2, 1) is divide internally in the ratio 2:1 by a point M = (2, q). find the value of q

- A. -5  
 B. 12  
 C. 3  
 D. 2

22. Which of the following is among a measure of dispersion

- A. mean  
 B. scores  
 C. variance  
 D. mode

24. A coin is biased so that  $p(\text{head}) = \frac{1}{4}$  and  $p(\text{tail}) = \frac{3}{4}$ , if the coin is tossed 5 times, find the probability of obtaining no tails

- A.  $\frac{1}{222}$   
 B.  $\frac{15}{2224}$   
 C.  $\frac{27}{254}$   
 D.  $\frac{11}{254}$

25. If the probability of winning an election by a candidate is  $\frac{p}{q}$ , what is the probability of not winning the election?

- A.  $\frac{2}{3}$   
 B. 0  
 C.  $\frac{3-2}{1}$   
 D.  $\frac{4-5}{5}$

## ANSWERS ON MATHEMATICS 2009/2010

1. -2. - 3. B 4. B 5. D 6. C 7. D 8. A 9. C  
 10. A 11. D 12. A 13. - 14. D 15. B 17. A  
 19. B 24. C

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# 2010/2011 CHEMISTRY POST UTME QUESTIONS

**INSTRUCTION: Shade the correct answer in the box provided on the answer sheet**

1. "Equal volumes of all gasses at the same temperature and pressure contain the same number of molecules" is an expression of  
 A. Boyle's law  
 B. Graham's law  
 C. Charles law  
 D. Avogadro's law  
 E. Gay Lussac's law

2. Which of the following is the anhydride of HNO<sub>3</sub>?  
 A. NO<sub>2</sub>  
 B. NO  
 C. N<sub>2</sub>O<sub>2</sub>  
 D. N<sub>2</sub>O<sub>5</sub>

3. Duralumin consists of aluminium, copper\_\_\_\_, and \_\_\_\_  
 A. zinc and gold  
 B. lead and manganese  
 C. Nickel and silver  
 D. manganese and magnesium  
 E. nickel and manganese

4.  $2\text{MnO}_4^- + 10\text{Cl}^- + 16\text{H}^+ \rightarrow 2\text{Mn}^{2+} + 5\text{Cl}_2 + 8\text{H}_2\text{O}$ . Which of the substances serves as an oxidizing agent  
 A.  $10\text{Cl}^-$   
 B.  $\text{Mn}_2^+$   
 C.  $5\text{Cl}_2$   
 D.  $\text{MnO}_4^-$   
 E.  $\text{H}_2\text{O}$

5. In which of the following reactions is the position of equilibrium affected by an increase in pressure?  
 A.  $2\text{NO}_2(\text{g}) \rightleftharpoons \text{N}_2\text{O}_4(\text{g})$   
 B.  $3\text{H}_2(\text{g}) + \text{N}_2(\text{g}) \rightleftharpoons 2\text{NH}_3(\text{g})$   
 C.  $2\text{H}_2(\text{g}) \rightleftharpoons \text{N}_2(\text{g}) + \text{H}_2(\text{g})$   
 D.  $2\text{SO}_2(\text{g}) \rightleftharpoons 2\text{SO}_3(\text{g})$   
 E. none of the above

6. The mass silver deposited when a current of 5A is passed through a solution of silver salt for 1939sec is?  
 A. 10g  
 B. 1.08g  
 C. 27g

D. 13.5g  
 E. 10.8g  
 [Ag = 108, F = 96500Cmol<sup>-1</sup>]

7. The pH of 0.01M of NaOH solution is?  
 A. 10  
 B. -3  
 C. 3  
 D. 2  
 E. -2

8. When dH is positive, a reaction is said to be\_\_\_\_.  
 A. reversible  
 B. Ionic  
 C. endothermic  
 D. exothermic  
 E. covalent

9. The reactants in a blast furnace during the extraction of iron are  
 A. sand, silica, and coke  
 B. stone, coke and iron ore  
 C. coke, iron ore and limewater  
 D. silica, coke and iron ore  
 E. iron ore, coke and limestone

10. What is Y in the equation?  
 ${}_{50}^{134}\text{Ba} \rightarrow {}_{54}^{134}\text{X} + \text{Y}$   
 A. 0  
 B. n  
 C. a  
 D.  ${}^4_2\text{He}$   
 E. 3

11. \_\_\_\_discovered the electron?  
 A. Milikan  
 B. Rutherford  
 C. J.J Thompson  
 D. Faraday  
 E. none of the above

12. Which of the following salts dissolve in water to give a pH of 7?  
 A. Na<sub>2</sub>SO<sub>4</sub>  
 B. CH<sub>2</sub>COOH  
 C. Na<sub>2</sub>S  
 D. Na<sub>2</sub>CO<sub>3</sub>  
 E. NaCl

13. Greenhouse effect can be reduced by controlling?  
 A. water evaporation

- B. the use of artificial fertilizers  
 C. the use of aerosols  
 D. burning of wood and fossil fuel  
 E. all of the above

15.  $30\text{cm}^3$  of hydrogen was exposed with  $10\text{cm}^3$  of oxygen at  $100^\circ\text{C}$ . what is the total volume of the gaseous mixture?

- A.  $40\text{cm}^3$   
 B.  $30\text{cm}^3$   
 C.  $10\text{cm}^3$   
 D.  $20\text{cm}^3$   
 E.  $50\text{cm}^3$

17. Alkanes generally undergo \_\_\_\_\_ reaction?

- A. substitution  
 B. addition  
 C. haemolysis  
 D. isomerism  
 E. homologous

18. The catalyst used in the Haber process for the manufacture of ammonia is \_\_\_\_\_

- A.  $\text{MgO}^2$   
 B. finely divided copper  
 C. finely divided nickel  
 D. platinum (II)  
 E. finely divided iron

19. What volume of hydrogen is produced at stp when 3.25g of zinc reacts with excess

HCl according to the equation;  $\text{Zn}_{(s)} + 2\text{HCl}_{(aq)} \rightarrow \text{ZnCl}_{2(aq)} + \text{H}_{2(g)}$

[Zn = 65, GMV =  $22.4\text{dm}^3$  at s.t.p]

- A.  $22.4\text{dm}^3$   
 B.  $22.4\text{cm}^3$   
 C.  $2.24\text{dm}^3$   
 D.  $2.24\text{cm}^3$   
 E.  $1.12\text{dm}^3$

20. An element Y forms a volatile hydride  $\text{CYH}_3$  with a vapour density of 17.0. the relative atomic mass of Y is?

- A. 17  
 B. 34  
 C. 31  
 D. 14  
 E. 20

## ANSWERS TO CHEMISRY 2010/2011 QUESTIONS

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

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## 2011/2012 USE OF ENGLISH POST UTME QUESTIONS

**Choose the expression or word which BEST COMPLETES each sentence**

1. I am intent\_\_\_\_\_continuing my course  
A. on  
B. with  
C. as  
D. to  
E. at
2. \_\_\_\_\_equations use letters to stand for numbers  
A. Silmultenous  
B. Simultaneous  
C. Simultaneous  
D. Simultaneous

**From the options A to D, choose the expression that is opposite in meaning to the underlined word(s).**

3. Elemi's sagacity contrasted sharply with his friend's  
A. Timidity  
B. Wisdom  
C. Fluency  
D. Foolishness
4. Some people keep ferocious animals as pets.  
A. Gentle  
B. Wild  
C. Fierce  
D. Domestic

**From the options listed A – D select the word that best CAPTURES THE MEANING of the italicized part of the sentences**

5. Every visitor to Calabar must visit where photographs and *artefacts* of early European colonial presence in Nigeria are kept.  
A. Archives  
B. Ranch  
C. Market  
D. museum

**From the options A to D, choose the expression that is NEAREST IN MEANING to the underlined word**

6. Ebire's generosity turned out to be her Achilles' heel  
A. Strong point  
B. Favourite habit  
C. Weak point  
D. Less popular virtue

**Choose the expression or word which BEST COMPLETES each sentence**

7. The giant hydro-electric project is among the\_\_\_\_\_of colonial rule in Southern Africa  
A. Inheritance  
B. Remnants  
C. Legacies  
D. Evidence

8. Ukpabio is proficient\_\_\_\_\_tailoring  
A. With  
B. In  
C. Of  
D. At

**Choose the word or phrase that is OPPOSITE IN MEANING to the underlined**

9. The demonstration was organized by hoodlums  
A. Criminals  
B. Activists  
C. Thugs  
D. Soldiers

10. The plaintiff convinced the court that the murder was inadvertent  
A. Brutal  
B. Wicked  
C. Careless  
D. Premeditated

11. The bush burning festival will further renew our forest resource  
A. Increase  
B. Reduce  
C. Deplete  
D. Remove

**Choose from the options lettered A – E the one that has the correct stress with the word given. In each word only the stressed part is in CAPITAL**

12. Planetarium  
 A. PLAN-e-tar-i-um  
 B. plan-E-tar-i-um  
 C. plan-e-TAR-i-um  
 D. plan-e-tar-I-um

**Choose from the options the word which has THE SAME SOUND as the underlined**

13. COURTESY  
 A. our  
 B. Court  
 C. Shirt  
 D. Tour

**From the options listed A – D select the word that best CAPTURES THE MEANING of the italicized part of the sentences.**

14. Lecturers assisted Prof. Atahiru Jega when Nigerians *chose* their political leaders  
 A. election  
 B. nomination  
 C. appointment  
 D. selection

15. Mother always pays attention to details  
 A. frivolous  
 B. interesting  
 C. rigid  
 D. meticulous

**Choose the option that BEST EXPLAINS the information conveyed in the sentences below**

16. The rampage in England shows that youths react the same way under provocation  
 A. youths in England are very good  
 B. youths in England are miscreants  
 C. youths act the same way when provoked  
 D. youths provoke people in England

**From the options choose the appropriate STRESS pattern. The stressed syllables are written in CAPITAL letters.**

17. Intimacy  
 A. INTimacy  
 B. inTIMacy  
 C. intiMAcy  
 D. INTImacy

18. consideration  
 A. CONsideration  
 B. consideration  
 C. consiDERation  
 D. considerAtion

**From the words lettered A – D choose the word that rhymes with the given word**

19. purity  
 A. plentiful  
 B. security  
 C. purify  
 D. nonentity

**From the words lettered A – D choose the word that rhymes with the given word**

20. beautiful  
 A. beautify  
 B. beautification  
 C. dutiful  
 D. dignify

**Choose from the options lettered A – E the one that has the correct stress with the word given. In each word only the stressed part is in CAPITAL**

21. constitutional  
 A. con-sti-tu-tion-AL  
 B. con-sti-TU-tion-al  
 C. CON-sti-tu-tion-al  
 D. con-STI-tu-tion-al

22. abnormality  
 A. AB-nor-ma-li-ty  
 B. ab-nor-ma-li-TY  
 C. ab-nor-ma-LI-ty  
 D. ab-nor-MA-li-ty

**From the options A to D, choose the expression that is NEAREST IN MEANING to the underlined word**

23. The use of Latin expressions in English is now dated  
 A. well-established  
 B. historical  
 C. old-fashioned  
 D. popular

24. His uncle showed affected interest in his welfare  
 A. pretended  
 B. loving

- C. genuine  
D. deep

**From the options choose the expression that BEST COMPLETES each sentence**

25. I am qualified for the job; \_\_\_\_\_?

- A. haven't I  
B. Isn't it  
C. aren't I  
D. ain't I

26. My sister along with her colleagues \_\_\_\_\_ the museum today.

- A. are visiting  
B. have visited  
C. were visiting  
D. is visiting

**Choose the word that has the SAME SOUND as the one represented by the underlined letter**

27. mansion

- A. cheap  
B. leisure  
C. peace  
D. action

28. time

- A. print  
B. might  
C. flip  
D. illegal

**From the options choose the expression that BEST COMPLETES each sentence**

29. Every student \_\_\_\_\_ before the principal entered the hall

- A. has arrived  
B. have arrived  
C. had arrived  
D. arrived

30. The workers presented \_\_\_\_\_ to the National Assembly

- A. five pages document  
B. five-paged document  
C. a five-paged document  
D. a five-page document

**From the options A to D, choose the expression that is NEAREST IN MEANING to the underlined word(s).**

31. A dogged student is likely to succeed

- A. Studious  
B. Clever  
C. Curious  
D. Determined

**Choose the option that best explains the information conveyed in the sentence below**

32. When I visited Okon I only gave him a congratulatory card

- A. the only person I visited was Okon and nobody else  
B. it was only Okon that I gave a congratulatory card  
C. Okon only wanted a congratulatory card  
D. All that I gave Okon when I visited him was a congratulatory card

**From the options choose the expression that BEST COMPLETES each sentence**

33. The police \_\_\_\_\_ up a list of suspects in the recent bombings.

- A. Has drawn  
B. Has drawn  
C. have drawn  
D. Have drawn

**Choose the word that has the same sound as the one represented by the underlined letter**

34. book

- A. lamb  
B. flock  
C. slump  
D. club

35. key

- A. kite  
B. quay  
C. kindred  
D. quarter

**Choose the expression or word which best completes each sentence**

36. Since Atim hasn't come till now I am in doubt \_\_\_\_\_ what to do

- A. to  
B. with  
C. about  
D. of

37. The method \_\_\_\_\_ does not give the expected results
- you recommended
  - you visited
  - you told me
  - you sent me

**From the options listed A – E select the word that best captures the meaning of the italicized part of the sentences**

38. Wolves are *meat eaters*

- herbivores
- carnivores
- animals
- omnivores

39. Miss Suzuki has published the *life stories of three movies stars*

- historian
- auto biographer
- writer
- biographer

40. Most of the birds my grandfather described are *no longer available* in our village forest

- travelled
- migrated
- hibernated
- extinct

**Select the word that best captures the meaning of the italicised part of the sentence**

41. The principles of American government are *the direct opposite* of communist doctrine

- apex
- antithesis
- anathema
- ambivalence

42. Superstition has it that certain foods and drinks are able to *increase sexual desire or potency*

- Apocryphal
- Amorous
- Amorphous
- Aphrodisiac

43. Collins had little understanding of the game, and most of his moves were random, *based on caprice* rather than reasoning

- Assiduous
- Astute

- Arbitrary
- Acute

44. Eddy vowed to live a long and happy life, *shun* temptation and avoid extremes

- Deny
- Devolve
- Eschew
- Emulate

**Choose the expression or word which best completes each sentence**

45. By the end of this year \_\_\_\_\_ in this town for eleven years

- I'm living
- I'd be living
- I have lived
- I'll have lived

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

46. He was reported \_\_\_\_\_ the policeman

- to be assaulting
- to assault
- assaulting
- to have assaulted

47. He devoted himself \_\_\_\_\_ homeless children

- to helping
- to help
- with helping
- helping

48. My younger brother looked ill last night and evidently \_\_\_\_\_ this morning.

- Worse
- Worst
- More ill
- leaner

**After each of the following sentences, a list of possible interpretation of all or part of the sentence is given. Choose the interpretation that you consider most appropriate for each sentence:**

49. For us to succeed in this task all hands must be on deck. This means that everybody

- should push with his hands
- will have to place his hands on the deck
- must cooperate
- should take a test to qualify

50. Kate was at home with all the questions asked by the examiner. This means that Kate was:

- A. Familiar with the questions
- B. Went home with the questions
- C. Prepared to go home with the questions
- D. Conceited about the questions

51. Mike flies off the handle each time there is an argument. This means:

- A. Mike holds the door handle when he argues
- B. Mike allows the handle to fly
- C. Mike easily loses his temper
- D. Mike can cope with any argument

**Complete the following sentences with the right option from the words supplied after each sentence**

52. When the fire broke out in the hostel, students in \_\_\_\_\_ rushed out in all directions.

- A. Crisis
- B. Panic
- C. Haste
- D. Hurry

53. Astronomers keep a close watch of the night sky in order not to miss the \_\_\_\_\_ appearance of some stars

- A. Parallel
- B. Periodic
- C. Regular
- D. Constant

**Choose the word or phrase from options A-D which has the nearest meaning to the underlined word or words in each sentence**

54. My mother has refused to come to live in Lagos because she prefers the tranquil life in the village to the hurly burly of the city.

- A. Sweet
- B. Prosperous
- C. Peaceful
- D. Decent

55. A lorry larger than an elephant was struck on the bridge

- A. As large as an elephant
- B. Carrying an elephant.
- C. That looked like an elephant
- D. Of enormous proportions.

**Choose the option that best completes the sentence**

56. The dentist found that his patient's teeth \_\_\_\_\_

- A. Have long decayed
- B. Have long been decayed
- C. Have long being decayed
- D. Had long decayed

57. In order to carry out the necessary examination, the dead body was \_\_\_\_\_

- A. Extracted
- B. Exhumed
- C. Extradited
- D. Expelled

58. He went abroad with a view \_\_\_\_\_ a business partner

- A. To fund
- B. To funding
- C. To be funding
- D. To have funded

**In question 59, which of the options express the same idea as the one in quote?**

59. 'To put something aside' is to

- A. Put it one's side
- B. Put it in a side pocket for future use
- C. Keep something for some special purpose
- D. Keep in safety.

**Select the option that best explains the sentence:**

60. The painting was beautifully faked

- A. The painting was a good deceptive replica
- B. The painting was well framed and displayed
- C. The painting was deceptively decorated
- D. The painting was carefully hung

**From the alternatives provided select the one which best completes the sentence**

61. If only I \_\_\_\_\_ insured? But I wasn't. But I have to pay a lot of money

- A. am
- B. have been
- C. had been
- D. was to be



62. Since the petition writer did not include his name, the vice chancellor refused to act on such \_\_\_\_\_ letter

- A. a spontaneous
- B. an anonymous
- C. a scandalous
- D. a cowardly

63. The first graduation ceremony of the university was attended by men from all \_\_\_\_\_ of life

- A. works
- B. areas
- C. walks
- D. walk

**Choose the word or phrase from options A – D which has the nearest meaning to the underlined word or words in each sentence**

64. He should be able to do it alone

- A. he would be able to do it alone
- B. he ought to be able to do it alone
- C. he has to be able to do it alone
- D. he will do it alone

65. The old man was said to have died intestate

- A. without an estate
- B. in his estate
- C. without a will
- D. in good state

**From the alternatives provided select the one which best completes the sentence**

66. If only I \_\_\_\_\_ insured? But I wasn't. But I have to pay a lot of money

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**In each of the following questions, the word in capital letter has the emphatic stress. Choose the option that best fits the expression in the sentence**

71. The man BOUGHT the newspaper

- A. Is this the newspaper which the man bought?
- B. Did the man read the newspaper?
- C. Who bought the newspaper?
- D. What did the man buy?

72. The chief RAN to the place

- A. Where did the chief run to?
- B. Did the chief walk to the place?
- C. Did the princess run to the place?
- D. Who ran to the place?

**From the options lettered A – D choose the word opposite in meaning to the underlined words in the following sentences**

73. Ebere's \_\_\_\_\_ contrasts with his brother's indolence

- A. indulgence
- B. laziness
- C. labour
- D. diligence

74. The discussion ended on an amicable note even though there was grave \_\_\_\_\_ at the beginning

- A. hostility
- B. incompatibility

- C. irresponsibility
- D. camaraderie

**Select the word that best captures the meaning of the italicized part of the sentence**

75. Some politicians in the area were said to be engaged in *double dealing*

- A. eschewing
- B. effeteness
- C. duplicity
- D. dubiousness

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## **ANSWERS TO ENGLISH LANGUAGE 2011/2012 QUESTIONS**

- 1. A 2. D 3. D 4. A 5. D 6. C 7. C 8. D 9. B
- 10. D 11. C 12. C 13. C 14. A 15. D 16. C
- 17. A 18. D 19. B 20. C 21. B 22. D 23. C
- 24. A 25. C 26. D 27. D 28. B 29. C 30. D
- 31. D 32. D 33. D 34. D 35. B 36. C 37. A
- 38. B 39. D 40. D 41. B 42. D 43. C 44. C
- 45. D 46. D 47. A 48. A 49. C 50. A 51. C
- 52. B 53. B 54. C 55. D 56. D 57. B 58. B
- 59. C 60. A 61. C 62. B 63. C 64. A 65. D
- 66. C 67. B 68. C 69. A 70. D 71. B 72. B
- 73. D 74. B 75. C

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# 2011/2012 COMPUTER SCIENCE QUESTIONS

- The following are output devices except:
  - Mouse
  - Plotter
  - Printer
  - Speakers
  - Monitor
- What type of device is a computer monitor?
  - Input
  - Output
  - Software
  - Storage
  - Processing
- What type of device is a computer keyboard?
  - Input
  - Output
  - Software
  - Storage
  - Processing
- What type of devices are computer speakers or headphones?
  - Input
  - Output
  - Software
  - Storage
  - Processing
- What type of device is a computer printer?
  - Input
  - Output
  - Software
  - Storage
  - Processing
- What type of device is a 3½ inch floppy drive?
  - Input
  - Output
  - Software
  - Storage
  - Processing
- What type of device is a computer mouse?
  - Input
  - Output
  - Software
  - Storage
  - Processing
- What type of devices are CDs or DVDs?
  - Input
  - Output
  - Software
  - Storage
  - Processing
- What type of device is a digital camera?
  - Input
  - Output
  - Software
  - Storage
  - Processing
- A program that can copy itself and infect a computer without the permission or knowledge of the owner is called what?
  - Floppy
  - Virus
  - Java
  - Monitor
  - Flash
- Which of these is a correct format of IP address?
  - 192.168.1.1
  - 192.168.111.1111
  - 192.168.900.1
  - 192.900.168.1
  - 192.16.168.111
- Which was the first web browser?
  - World Wide Web
  - Netscape Navigator
  - Internet Explorer
  - Safari
  - Chrome
- It is a small piece of text stored on a user's computer by a web browser for maintaining the state. What are we talking about?
  - Application
  - Session
  - Cookie
  - Query String
  - Applets
- Which of these is a correct format of Email address?
  - contact.website.info
  - contactwebsite.info

- C. contact@website.info
- D. contact@website@info
- E. Contact.website@info

15. What does HTTP stands for?

- A. Hypertext Transfer Protocol
- B. Hypertext Transfer Plotter
- C. Head Tail Transfer Plot
- D. Head Tail Transfer Protocol
- E. Hypertext Transmission Process

16. In computers, what is the smallest and basic unit of information storage?

- A. Bit
- B. Byte
- C. Newton
- D. Megabyte
- E. Kilo byte

17. What is Windows XP?

- A. Operating System
- B. Storage Device
- C. Processor
- D. Output Device
- E. Input Device

18. Which of the following is responsible for the management and coordination of activities and the sharing of the resources of the computer?

- A. Application Software
- B. Motherboard
- C. Operating System
- D. RAM
- E. System Software

19. MP3 file format is associated with what type of files?

- A. Video
- B. Audio
- C. Image
- D. Word Document
- E. Flash file

20. MS-Word is an example of

- A. Application Software
- B. System Software
- C. Operating System
- D. Scanner
- E. ALU

21. Which software application is used for accessing sites or information on a network (as the World Wide Web)?

- A. Operating System
- B. Web Browser
- C. Microsoft Word

- D. Microsoft Excel
- E. FileZilla

22. What are the two broad categories of software?

- A. MS Word and Spreadsheet
- B. Transaction and Application
- C. Microsoft and Mac OS
- D. System and Application
- E. Transaction and System

23. One kilobyte contains how many bytes?

- A. 1000
- B. 1001
- C. 100
- D. 1024
- E. 10

24. Who Owns the Internet?

- A. Internet Engineering Task Force
- B. ICANN
- C. Internet Architecture Board
- D. No one owns it
- E. InterNIC

25. What is the shortcut key of printing a document for computer having windows?

- A. Ctrl + P
- B. Shift + P
- C. Alt + P
- D. Shift + PP
- E. Fn + P

26. In computers, '.TMP' extension refers usually to what kind of file?

- A. Temporary file
- B. Image file
- C. Video file
- D. Text file
- E. Database file

27. The way of manipulating data into information is called

- A. Storing
- B. Processing
- C. Deletion
- D. Organizing
- E. Transmission

28. What Does BIOS Stand For?

- A. Better Integrated Operating System
- B. Basic Input Output System
- C. Battery Integrated Operating Setup
- D. Backup Input Output System
- E. Battery Input Operating System

29. Memory management is a feature of

- A. Processor
- B. Operating System
- C. MS Word
- D. Animation
- E. UPS

30. Which of the following is not a storage device?

- A. DVD
- B. Hard Disk
- C. Floppy Disk
- D. Mouse
- E. Flash Drive

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## **ANSWERS TO COMPUTER SCIENCE 2011/2012 QUESTIONS**

1. A 2. B 3. A 4. B 5. B 6. D 7. A 8. D 9. A  
10. B 11. A 12. A 13. C 14. C 15. A 16. A  
17. A 18. C 19. B 20. A 21. B 22. D 23. D  
24. D 25. A 26. A 27. B 28. B 29. B 30. D

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## 2012-2013 PHYSICS POST UTME QUESTIONS

1. The weakest form of bonding in materials is \_\_\_\_
  - A. Ionic
  - B. Metallic
  - C. Covalent
  - D. Van der Waals
2. The period of a simple pendulum oscillating in a vacuum depends on
  - A. The mass of the pendulum
  - B. The length of the pendulum
  - C. The acceleration due to gravity
  - D. The volume of the pendulum
3. Which one of the following phenomena cannot be explained by the wave theory of light?
  - A. Refraction
  - B. Interference
  - C. Diffraction
  - D. Photoelectric effect
4. Which of these best describes the power of a lens
  - A.  $P = \frac{1}{f}$
  - B.  $P = \frac{1}{f^2}$
  - C.  $P = f^2$
  - D.  $P = f$
5. Which of the following attributes of a machine does not depend on friction?
  - (1) Mechanical advantage
  - (2) Velocity ratio
  - (3) Efficiency
  - A. 1 only
  - B. 2 only
  - C. 3 only
  - D. 1 and 2 only
6. A cell is a device which converts
  - A. Kinetic energy to potential energy
  - B. Sound energy to electrical energy
  - C. Chemical energy to heat energy
  - D. Chemical energy to electrical energy
7. In which of the following media would sound waves travel fastest
  - A. kerosene
  - B. alcohol
  - C. water
  - D. iron
8. Which of the following is not a use of plain mirrors
  - A. as wing mirrors on cars
  - B. as a looking glass
  - C. in a periscope
  - D. in a kaleidoscope
9. If  $V$  is the velocity of a wave, is its wavelength and  $T$  its period. The  $V$ , and  $T$  are related by the expression
  - A.  $=V/T^2$
  - B.  $V = T$
  - C.  $= VT$
10. Three 3.0 ohms resistors are connected in parallel. What is the equivalent resistance?
  - A. 9.0 ohms
  - B. 1.0 ohm
  - C. 6.0 ohms
  - D. 3.0 ohms
11. The distance between two successive crest or trough is
  - A. amplitude
  - B. wavelength
  - C. frequency
  - D. wave distance
12. An object is placed 15cm in front of a convex mirror and an image is produced 5cm behind the mirror, calculate the focal length of the mirror
  - A. -7.5cm
  - B. 10cm
  - C. 7.5cm
  - D. 20cm
13. A ball is projected horizontally at 15m/s from a point 20m above a horizontal surface. The magnitude of its velocity in m/s when it hits the surface is ( $g=10\text{m/s}^2$ ).
  - A. 10
  - B. 15
  - C. 20
  - D. 25
14. A malaria patient has a body temperature of  $39.5^\circ\text{C}$ . Convert this temperature to of \_\_\_\_
  - A.  $83.2^\circ\text{F}$
  - B.  $103.1^\circ\text{F}$
  - C.  $77.4^\circ\text{F}$
  - D.  $147^\circ\text{F}$
15. Positive charges usually move from
  - A. Higher to lower potential areas

- B. Lower to higher potential areas
- C. North to south
- D. Higher resistance to lower resistance areas

16. A truck traveling with a velocity of 40m/s applies the brakes and comes to a halt after 20 seconds. What is distance travelled by the truck before coming to a halt

- A. 40m
- B. 800m
- C. 400m
- D. 10m

17. In a harmonic oscillation of a simple pendulum, one of the following statements is correct?

- A. The potential energy and the kinetic energy of the bob are equal at all times
- B. The potential energy is equal to the kinetic energy at the central position of the oscillation
- C. The potential and the kinetic energies of the bob are maximum at the maximum height of the oscillation
- D. None of the above

18. If the linear expansivity of a metal rod is  $4 \times 10^{-5}$  per  $^{\circ}\text{C}$ , what will be the new length of the rod if it is heated from  $15^{\circ}\text{C}$  to  $95^{\circ}\text{C}$  from its original length of 20cm

- A. 0.064 cm
- B. 0.64 cm
- C. 20.64 cm
- D. 20.064 cm

19. The heat required to melt ice at  $0^{\circ}\text{C}$  to water at the same temperature is called

- A. Apparent heat of fusion
- B. Apparent heat of vaporization
- C. Latent heat of vaporization
- D. Latent heat of fusion

20. Which of the following is used in a nuclear reactor to slow down fast-moving electrons?

- A. Carbon dioxide gas
- B. Liquid sodium metal
- C. Concrete shield
- D. Graphite rods.

21. Calculate the power-rating of a heating element which melted in 20g of ice at  $0^{\circ}\text{C}$  and raised the temperature of the resulting water to  $60^{\circ}\text{C}$  in 2 minutes Specific latent heat of fusion of ice = 340 J/g [Specific heat

capacity of water =  $4.2 \text{ J/g}^{\circ}\text{C}$ ]

- A. 5.92kw
- B. 98.6w
- C. 107w
- D. 42w

22. If a man cannot see objects very close to him the following can be used to correct the problem.

- A. Convex lens
- B. Convex mirror
- C. Concave lens
- D. Concave mirror

23. when the bob of a simple pendulum is at its highest displacement, one of the following happens:

- A. kinetic energy is maximum
- B. potential energy is maximum
- C. total energy is zero
- D. momentum is maximum

24. When the atmospheric pressure is very low in a given location, boiling point of water:

- A. increases
- B. decreases
- C. remains
- D. cannot boil

25. Which of these statements is correct about cathode rays? They are fast moving

- A. atoms
- B. neutrons
- C. electrons
- D. ions

26. Which of the following has the highest surface tension?

- A. soapy water
- B. cold water
- C. warm water
- D. Salt water

27. A truck traveling with a velocity of 40m/s applies the brakes and comes to a halt after 20 seconds. What is the distance travelled by the truck before coming to a halt?

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29. 44KJ of heat was used in raising the temperature of 2kg of paraffin oil from 36<sup>o</sup>K to 37<sup>o</sup>K. Calculate the specific heat capacity of paraffin oil

- A. 2.2 J/kg/K
- B.  $2.2 \times 10^3$  J/kg/K
- C.  $2.2 \times 10^5$  J/kg/K
- D. 220 J/kg/K

30. A simple machine overcomes a load of 4000N when a force of 200N is applied. If the velocity ration of the machine is 25, calculate the efficiency of the machine?

- A. 1.25%
- B. 80%
- C. 125%
- D. 0.8%

31. A long-sighted person is to read a bookheld at a distance of 20cm from the eyes. Which of the following will the person require to read the book with ease?

- A. Nothing
- B. Concave lens
- C. Convex lens
- D. Concave mirror

32. An object at the bottom of a pool of liquid 10m depth is seen by an observer as if it is at 8m depth. What is the refractive index of the liquid

- A. 0.25
- B. 0.20
- C. 1.25
- D. 0.8

33. Which of the following has the highest surface tension?

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34. The emf developed in a circuit is directly proportional to the rate of change of magnetic flux. The above was a finding from

- A. Maxwell
- B. Faraday
- C. Ampere
- D. Lenz

35. Which of the following is stored by a dry LeClanche cell?

- A. Chemical energy
- B. Solar energy
- C. Electrical energy
- D. Heat energy

36. A ball is projected horizontally from the top of a hill with a velocity of 20m/s. if it reaches the ground 4 seconds later. What is the height of the hill? ( $g=10\text{m/s}^2$ ).

- A. 200m
- B. 20m
- C. 160m
- D. 40m

37. The expansion of solids can be considered a disadvantage in

- A. fire-alarm system
- B. thermostat
- C. reverting of steel plates
- D. balance wheel of a watch

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29. 44KJ of heat was used in raising the temperature of 2kg of paraffin oil from 36°K to 37°K. Calculate the specific heat capacity of paraffin oil

- A. 2.2 J/kg/K
- B.  $2.2 \times 10^3$  J/kg/K
- C.  $2.2 \times 10^5$  J/kg/K
- D. 220 J/kg/K

30. A simple machine overcomes a load of 4000N when a force of 200N is applied. If the velocity ration of the machine is 25, calculate the efficiency of the machine?

- A. 1.25%
- B. 80%
- C. 125%
- D. 0.8%

31. A long-sighted person is to read a bookheld at a distance of 20cm from the eyes. Which of the following will the person require to read the book with ease?

- A. Nothing
- B. Concave lens
- C. Convex lens
- D. Concave mirror

32. An object at the bottom of a pool of liquid 10m depth is seen by an observer as if it is at 8m depth. What is the refractive index of the liquid

- A. 0.25
- B. 0.20

- C. 1.25  
D. 0.8

33. Which of the following has the highest surface tension?

- A. soapy water  
B. cold water  
C. warm water  
D. Salt water

34. The emf developed in a circuit is directly proportional to the rate of change of magnetic flux. The above was a finding from

- A. Maxwell  
B. Faraday  
C. Ampere  
D. Lenz

35. Which of the following is stored by a dry LaChance cell?

- A. Chemical energy  
B. Solar energy  
C. Electrical energy  
D. Heat energy

36. A ball is projected horizontally from the top of a hill with a velocity of 20m/s. if it reaches the ground 4 seconds later. What is the height of the hill? ( $g=10\text{m/s}^2$ ).

- A. 200m  
B. 20m  
C. 160m  
D. 40m

37. The expansion of solids can be considered a disadvantage in

- A. fire-alarm system  
B. thermostat  
C. reverting of steel plates  
D. balance wheel of a watch

60. A total internal reflection occurs in the glass-air boundary when the angle of incidence is

- A. greater than the right angle  
B. greater than critical angle  
C. greater than angle of prism  
D. greater than angle of deviation

61. At what temperature will the Celsius scale coincide with the Fahrenheit scale?

- A.  $40^\circ$   
B.  $-70^\circ$   
C.  $70^\circ$   
D.  $-40^\circ$

62. Which of these statements is correct about cathode rays? They are fast moving

- A. atoms  
B. neutrons  
C. electrons  
D. ions

63. The upthrust experienced by an object immersed in a fluid makes the object feel

- A. Heavier  
B. Lighter  
C. sink lower  
D. none of the above

64. Which of the following has the highest surface tension?

- A. soapy water  
B. cold water  
C. warm water  
D. Salt water

65. Which of these is NOT a consequence of hydrogen bubbles covering the upper plate of a primary cell?

- A. Polarization  
B. Local action  
C. Generation of less current by the cell  
D. Increase in the resistance of the cell.

66. What is the current in a circuit if the charge of 240 coulombs pass each point in 2 minutes

- A. 120 A  
B. 480 A  
C. 4 A  
D. 2 A

67. An electric in Nigeria has a number of 60w coloured bulb. How many can be connected to a 240V supply through a 5A fuse

- A. 20  
B. 48  
C. 5  
D. 4

68. A radio station broadcasts on a frequency of 100MHz. If the speed of the radio wave is  $3 \times 10^8\text{m/s}$ , what is the wavelength of the radio wave from this station

- A.  $3 \times 10^6\text{m}$   
B.  $3 \times 10^3\text{m}$   
C. 300m  
D. 3m

69. If you need to clearly see an object that is at a very far distance, then you need to use

- A. periscope
- B. microscope
- C. telescope
- D. prism scope

70. Michael Faraday found that the EMF developed across a conductor is directly proportional to the

- A. current applied
- B. voltage applied
- C. rate of change of magnetic flux
- D. rate of change of electric flux

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## **ANSWERS TO PHYSICS 2011/2012 QUESTIONS**

1. D 2. C 3. D 4. A 5. B 6. D 7. D 8. A 9. C  
10. B 11. B 12. A 13. D 14. B 15. A 16. A  
17. D 18. D 19. D 20. C 21. B 22. A 23. B  
24. B 25. C 26. B 27. A 28. D 29. B 30. B  
31. C 32. C 33. B 34. B 35. A 36. C 37. D  
38. A 39. B 40. C 41. C 42. C 43. C 44. C  
45. D 46. B 47. C 48. D 49. D 50. A 51. C  
52. B 53. A 54. D 55. C 56. B 57. B 58. A  
59. D 60. B 61. D 62. C 63. B 64. B 65. B  
66. D 67. A 68. D 69. C 70. C

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# 2011/2012 CHEMISTRY POST UTME QUESTIONS

- \_\_\_\_\_ are allotropes of carbon
  - graphite and sulphur
  - amorphous charcoal and coke
  - diamond and graphite
  - carbon monoxide and coke
- A substance is said to be hygroscopic if it \_\_\_\_\_
  - does not absorb moisture
  - is suspended in water
  - dissolves when it absorbs moistures
  - hydrolysis in water
- $\text{CH}_3\text{CO}_2\text{H} + \text{CH}_3\text{CH}_2\text{OH}$ ? The functional group under and in the equation is a/an \_\_\_\_\_ group
  - Alkanol
  - Carbonyl
  - Keto
  - Carboxylic acid
- The gas equation  $PV = nRT$  is made up of Charles' Law and \_\_\_\_\_ law
  - Le Chateliers'
  - Gay-Lussac's
  - Boyle's
  - Newton's
- The acid in butter is called \_\_\_\_\_ acid
  - Butanoic
  - Butyric
  - Benzoic
  - Butandioic
- The oxidation state of calcium is  $\text{CaCl}_2$  is
  - +1
  - +2
  - +3
  - +4
- The mass number of an atom of an element is the sum of its
  - Electrons, neutrons and protons
  - Electrons and protons
  - Protons and neutrons
  - Valence electrons
- The existence of two or more forms of the same element in the same physical state is known as \_\_\_\_\_
  - Allotropy
  - Resonance
  - Hybridization
  - Isotopy
- In which of the following are radioactive isotopes used?
  - Scientific research
  - Dating techniques
  - Treatment of cancer
  - All of the above
- The phenomenon observed when dust particles collide randomly in a beam of sunlight is known as
  - Tyndale effect
  - Diffusion
  - Osmosis
  - Brownian movement
- The main characteristic features of transition metals are that they
  - Have the same atomic size
  - Are reducing agents
  - Forms ions easily
  - Have variable oxidation states
- In 1898, which scientist proposed that the atom is a sphere of positively charged matter in which negatively charged electrons are embedded
  - Earnest Rutherford
  - Max Planck
  - J.J Thomson
  - Robert Millikan
- Oxygen gas is collected in the laboratory by \_\_\_\_\_
  - upward displacement of air
  - upward displacement of water
  - downward displacement of water
  - using a gas layer
- $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$ . In the reaction above CuO is \_\_\_\_\_
  - oxidized to copper
  - reduced to copper
  - chemically converted to copper
  - reversed to copper
- Isotopes are atoms if the same element with \_\_\_\_\_
  - different protons

- B. mass above 50
- C. inter convertible masses
- D. different masses

16. A reaction is in equilibrium when \_\_\_\_

- A. the rate of the forward reaction is equal to the rate of the reverse reaction
- B. the reaction rates of the forward and backward reaction are zero
- C. its rate is reversible
- D. it does not produce ant product again

17. The boiling point of a liquid such as methanol is the temperature at which its

- A. vapour pressure is equal to 1 atmosphere
- B. vapour pressure is equal to the atmospheric pressure
- C. reactants and products are at standard states
- D. vapour pressure doubles atmospheric pressure

18. Alkenes and \_\_\_\_\_ are compounds that contain a multiple bond each

- A. Alkanes
- B. Benzene
- C. Alkynes
- D. Benzaldehyde

19. A palm fruit dropped to the ground from the top of a tree 45m tall, how long does it take to reach the ground? (take  $g=10\text{ms}^{-2}$ )

- A. 1s
- B. 2s
- C. 3s
- D. 5s

20. \_\_\_\_\_ is due to the formation of hydrogen gas bubbles around the copper plate of a simple cell

- A. polarization
- B. depolarization
- C. local action
- D. amalgamation

21. Which of the following can be explained by the kinetic theory?

- I. The physical state of matter
- II. Diffusion of gases
- III. Melting of solid
- IV. Evaporation of liquids

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

- D. I, II & III
- E. I, II, III & IV

22. The properties of electrovalent compounds include the following except

- A. High melting point and boiling point
- B. Conduction of electricity in the molten state
- C. High volatility at room temperature
- D. Ionization in aqueous solution

23. Which of the following statements is not corrected about electrolysis?

- A. Reduction occurs at the anode
- B. Anions migrate to the anode
- C. Positive ions migrate to the cathode
- D. Concentration affects the discharge of ions

24. Separation of mixtures of solids by physical methods can be based on differences in the following except

- A. Melting point
- B. Solubility
- C. Particle size
- D. Molar mass

25. The following are major gaseous pollutants except.

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

26. Brass is an alloy containing copper and

- A. zinc
- B. tin
- C. silver
- D. lead

27. Which of the following reduces the activation energy of a chemical reaction?

- A. freezing mixture
- B. reducing agent
- C. water
- D. catalyst

28. In the electrolysis of brime, the anode is

- A. carbon
- B. platinum
- C. zinc
- D. copper

29. What current in ampere will deposit 0.27g of aluminium in 2 hours?

[Al=27, F=9650°C].

- A. 3.2
- B. 8
- C. 0.4
- D. 16

30. What is the likely formula of a compound formed between element M in group 2 and between element X in group 7?

- A. M7X2
- B. MX2
- C. M2X7
- D. M2X

31. Which of the following can be explained by the kinetic theory?

- I. The physical state of matter
- II. Diffusion of gases
- III. Melting of solid
- IV. Evaporation of liquids

- A. IV
- B. I & II
- C. III & IV
- D. I, II & III
- E. I, II, III & IV

32. The properties of electrovalent compounds include the following except

- A. High melting point and boiling point
- B. Conduction of electricity in the molten state
- C. High volatility at room temperature
- D. Ionization in aqueous solution
- E. Decomposition of their solutions by electric current

33. Which of the following statements is not correct about electrolysis?

- A. Reduction occurs at the anode
- B. Anions migrate to the anode
- C. Positive ions migrate to the cathode
- D. Concentration affects the discharge of ions
- E. Electrolysis conduct electric current

34. Separation of mixtures of solids by physical methods can be based on differences in the following except \_\_\_\_

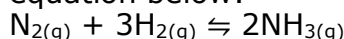
- A. Melting point
- B. Solubility
- C. Particle size
- D. Molar mass

35. The following are major gaseous pollutants except \_\_\_\_

- A. CO

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

36. The ration of reactants to products is 1: 3: 2 in the reaction represented by the equation below:



- A. Boyle's law
- B. Law of multiple proportion
- C. Gay-Lussac's law
- D. Law of constant composition

37. PH of a 0.0001M acid is

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

39. Alkanoates are produced from alkanols by

- A. Esterification
- B. Fermentation
- C. Saponification
- D. Oxidation

40. Esters are employed in the following except

- A. Making perfumes
- B. Nail vanisher
- C. Making solvent for cellulose trioxonitrate(V)
- D. Making cement

41. What mass of anhydrous sodium trioxocarbonate(IV) is present in 500cm<sup>3</sup> of 0.1mol dm<sup>-3</sup> of the solution [Na=23, C=12, O=16]

- A. 10.6g
- B. 106g
- C. 5.3g
- D. 53g

42. The oxidation state of oxygen in tetraoxosulphate(IV) acid is \_\_\_\_

- A. -4
- B. +4
- C. -2
- D. +2

43. Metals of the first transition series have special properties which are different from those of groups I and II elements because they have partially filled

- A. S orbital
- B. P orbital

- C. D orbital  
D. F orbital

44. Separation of different carotenes from carrot root uses a method

- A. centrifugation  
B. Distillation

- C. chromatography  
D. keratinization

45.

Solution	W	X	Y	Z
PH	8	12	4	2

From the table, which of the solutions W, C, Y and Z will liberate carbon (IV) oxide from a trioxocarbonate (IV) salt?

- A. Z  
B. Y  
C. W  
D. X

46. 50cm<sup>3</sup> of saturated solution of KNO<sub>3</sub> at 40°C contained 5.05g of salt. What is the solubility of KNO<sub>3</sub> at 40°C?

[K = 39, N = 14, O = 16]

- A. 1.0mol dm<sup>-3</sup>  
B. 1.5mol dm<sup>-3</sup>  
C. 2.0mol dm<sup>-3</sup>  
D. 5.0mol dm<sup>-3</sup>

47. A brand of ink containing cobalt (III), copper (II) and iron(II) ions can best be separated into its various components by

- A. fractional crystallization  
B. fractional distillation  
C. sublimation  
D. chromatography

48. If the rate law obtained for a given reaction is given as rate = K[X]<sup>n</sup>[Y]<sup>m</sup>, what is the overall order of the reaction.

- A. nm  
B. n/m  
C. n + m  
D. n-m

49. A molecular formula shows \_\_\_\_\_ in a molecule

- A. the elements present  
B. the number of atoms of each element  
C. cations and anions  
D. chemical symbols and number of atoms

50. Give the total mass of copper in 1gm of copper (II) sulphate

[Cu = 40; S = 32; O = 16]

- A. 0.25g  
B. 0.50g  
C. 10g  
D. 2.5g

51.  $^{114}_{55}\text{Cs} \rightarrow ^A_Z\text{E} \rightarrow ^4_2\text{a}$ .

Find the value of A and Z in the equation above

- A. 119, 53  
B. 110, 57  
C. 110, 53  
D. 110, 58

52. How many moles of H<sub>2</sub> molecules are needed to convert 5 mol of O<sub>2</sub> molecules to water?

- A. 5 mol of H<sub>2</sub>  
B. 10 mol of H<sub>2</sub>  
C. 15 mol of H<sub>2</sub>  
D. 20 mol of H<sub>2</sub>

53.  $^{222}_{88}\text{Ra} \rightarrow ^X_{88}\text{Rn} + \text{a}$ .

What is the value of X in the nuclear reaction above?

- A. 220  
B. 222  
C. 226  
D. 227.

54. When naphthalene on heating changes from solid state directly to the gaseous state, it undergoes

- A. sublimation  
B. evaporation  
C. combustion  
D. decomposition

55. Which of the following is an electrolyte?

- A. alcohol  
B. sodium ethanoate  
C. solid potassium hydroxide  
D. mercury

56. The equation  $^{14}_7\text{N} + ^4_2\text{He} \rightarrow ^{17}_8\text{O} + ^1_1\text{P}$  represents?

- A. nuclear fusion  
B. nuclear fission  
C. artificial radioactivity  
D. nuclear fission using positron

57. Which of the following is a general method of preparing acids?

- A. Direct combination of constituent elements  
B. Double decomposition involving a salt

solution

- C. Reaction between an anhydride and water  
 D. Reaction between a base and an amphoteric oxide  
 E. Dissolution of hydroxides followed by neutralization

58. Monosaccharides are

- A. hydrolysable  
 B. non-hydrolysable  
 C. not soluble in water  
 D. sweet but sometimes non-sugary

59. The major air pollutants that can result from smoky vehicles include

- A. Acid fumes  
 B. Hydrogen sulphide  
 C. Carbon (II) oxide  
 D. Carbon particles

60. If an element has the electronic configuration  $1s^2 2s^2 2p^6 3s^2 3p^4$ , it is \_\_\_\_\_

- A. metal  
 B. An alkaline earth metal  
 C. An S-block element  
 D. A P-block element

61. Compounds that have the same molecular formula but different structures are said to be \_\_\_\_\_

- A. Allotropic  
 B. Isotopic  
 C. Polymeric  
 D. Isomeric

62. Which of the following statements is not correct?

- A. Carbon exhibits allotropy  
 B. Sulphur exhibits allotropy  
 C. Chlorine exhibits allotropy  
 D. Hydrogen is a gas

63.  $300\text{cm}^3$  of a gas has a pressure  $400\text{mmHg}$ . If the pressure is reduced to  $150\text{mmHg}$ . Find its volume.

- A.  $700\text{cm}^3$   
 B.  $800\text{cm}^3$   
 C.  $350\text{cm}^3$   
 D.  $112.5\text{cm}^3$

65. Ethyne, Ethene, Cyclohexane and Propene can be classified as \_\_\_\_\_

- A. alkenes  
 B. aromatic compounds  
 C. saturated compounds  
 D. multiple bond hydrocarbons

66. If the PH of a compound is 3.2 that compound is \_\_\_\_\_

- A. Amphoteric  
 B. A Salt  
 C. An Acid  
 D. A Base

67. Which is the most ionic in the group below

- A.  $\text{Cl}_2$   
 B.  $\text{NaCl}$   
 C.  $\text{AlCl}_3$   
 D.  $\text{CaCl}_2$

68. Hydrogenation of palm oil results in a solid compound called

- A. candle  
 B. solid palm oil  
 C. palm oil  
 D. ester

69. An Amphoteric compound \_\_\_\_\_

- A. Reacts with alcohols  
 B. Reacts both as an acid and as a base  
 C. It is solid at room temperature  
 D. has a PH of 7

70. In structural isomerism same atoms are linked to \_\_\_\_\_

- A. carbon atoms  
 B. similar atoms  
 C. different neighbouring atoms  
 D. different functional groups

## ANSWERS TO CHEMISTRY 2011/2012 QUESTIONS

1. C 2. C 3. D 4. C 5. B 6. B 7. C 8. A 9. D  
 10. A 11. D 12. C 13. C 14. B 15. D 16. A  
 17. B 18. C 19. C 20. A 21. E 22. C 23. A  
 24. D 25. B 26. A 27. D 28. A 29. C 30. B  
 31. E 32. C 33. A 34. D 35. B 36. C 37. D  
 38. 39. A 40. D 41. C 42. C 43. C 44. C  
 45. B 46. A 47. D 48. C 49. D 50. A 51. C  
 52. B 53. C 54. A 55. B 56. C 57. A 58. B  
 59. C 60. D 61. D 62. C 63. B 64. D 65. D  
 66. C 67. B 68. C 69. B 70. C



## 2011/2012 BIOLOGY POST UTME QUESTIONS

1. The wavelike motion of the muscles of the oesophagus to push each bolus of food downwards is known as

- A. Anti-peristalsis
- B. Digestion
- C. Peristalsis
- D. Oesophageal motion

2. Which of these diseases cannot be controlled by killing the vectors?

- A. River blindness
- B. Malaria
- C. Polio
- D. Cholera

3. If a tall man (TT) marries a dwarf woman (tt) and they have four children, what will be the ratio of tall to dwarf children?

- A. 0 tall:4 dwarf
- B. 3 tall:1 dwarf
- C. 2 dwarf:2 tall
- D. 4 tall:0 dwarf

4. The chromosome is found in which organelle

- A. The Nucleus
- B. The Mitochondria
- C. The Vesicle
- D. The Cytosol

5. Photosynthetic organisms are classified as \_\_\_\_\_

- A. Autotrophs
- B. Heterotrophs
- C. Herbivorous
- D. Omnivorous

6. Which of the organisms listed below is not a micro-organism?

- A. Virus
- B. Tapeworm
- C. Coccus
- D. Vibrio cholera

7. The nervous system is made up of

- A. Kidney, bladder and liver
- B. Testes and ovaries
- C. Brain and spinal cord
- D. Muscles and skeleton

8. The synthesis of protein takes place in\_

- A. Golgi body

- B. Ribosome
- C. Mitochondria
- D. Nucleus

9. Mutations involving alterations in the genes are called

- A. Gene mutations
- B. Gene changes
- C. Chromosomal mutations
- D. Chromosomal changes

10. Which vertebra has a projection on the centrum called odontoid process?

- A. Atlas
- B. Axis
- C. Thoracic
- D. Lumber

11. Deamination occurs in\_\_\_\_\_

- A. Kidney
- B. Pancreas
- C. Spleen
- D. Liver

12. The ability of an organisms to live successfully in an environment is known as

- A. Succession
- B. Resistance
- C. Adaptation
- D. Competition

13. The following are connected with the movement of a reflex action Which of the following sequences indicates a correct path?

- (1) Central nervous system
- (2) Muscle
- (3) Skin
- (4) Sensory nerve
- (5) Motor nerve
- A. 1-2-3-4-5
- B. 2-1-4-5-3
- C. 3-4-1-2-5
- D. 3-4-1-5-2

14. Which of the following statements is NOT true of symbiosis?

- A. Symbionts must be living
- B. It is an association of 'give and take'
- C. The association may involve two plants
- D. Association between two similar species

15. The deficiency of Vitamin D leads to:

- A. Scurvy
- B. Pellagra

- C. Rickets
- D. Beriberi

16. Hepatic portal vein is unique because it

- A. Carries deoxygenated blood
- B. Begins and ends with capillaries
- C. Is the largest vein in mammals
- D. Carried digested food

17. The thoracic vertebrae of a mammal is characterized by the

- A. Vertebroarterial canal
- B. Prominent neural arch
- C. Prominent neural process
- D. Prominent neural spine

18. A grasshopper respire by means of its

- A. Lung-books
- B. Gills
- C. Lungs
- D. Tracheal tubes

19. The inactive state exhibited by an animal during hot dry seasons is termed

- A. Aestivation
- B. Dormancy
- C. Resting
- D. Hibernation

20. Auxins are produced in the

- A. petiole of leaves
- B. parenchyma of roots and shoots
- C. epidermis of roots and shoots
- D. apical regions of roots and shoots

21. Which of the following methods of reproduction is common in Paramecium and Amoeba?

- A. Conjugation
- B. Sexual reproduction
- C. Binary Fission
- D. Budding

22. An example of cryptic coloration is the:

- A. Mottled colours on moths that rest on lichens
- B. Bright colour of an insect pollinated flower
- C. Green colour of a plant
- D. Bright marks on a poisonous tropical frog on variegated leaves

23. Which of the following organs is responsible for controlling the body temperature regulation and water balance in mammals?

- A. Kidney

- B. Hypothalamus
- C. Parathyroid
- D. Adrenal

24. A man and his wife are both heterozygous for the sickle cell trait. The likely percentage of their offspring that will either be carriers or 'Sickler' is

- A. 75%
- B. 50%
- C. 25%
- D. 100%

25. The brain and the spinal cord make up the

- A. Peripheral nervous system.
- B. Autonomic nervous system
- C. Central nervous system.
- D. Somatic nervous

26. The hormone which regulates the amount of sugar in the blood is

- A. Thyroxine
- B. Auxin
- C. Insulin
- D. Adrenalin

27. Which of the following is the effect of using artificial pollination in plant breeding?

- A. production of healthy crops
- B. improvement of the variety of crops
- C. lengthening the maturity time
- D. making crops susceptible to diseases

28. Which of the following processes will not introduce carbon dioxide into the atmosphere?

- A. breathing
- B. photosynthesis
- C. Respiration
- D. Putrefaction

29. Which of the following does not contribute to the biomass in an ecosystem?

- A. producer's
- B. food chain
- C. consumer's
- D. micro-organisms

30. Which of these diseases cannot be prevented by immunization?

- A. Onchocerciasis
- B. Poliomyelitis
- C. Cholera
- D. Tuberculosis

31. Which of the following specialized structures are stimulated by touch, pressure, pain, heat and cold?

- A. receptors
- B. synapse
- C. cell bodies
- D. myelin

32. The process by which plants and animals are modified in structure, physiology and behaviour in order to survive is known as

- A. evolution
- B. adaptation
- C. succession
- D. hibernation

33. Thunderstorm can be beneficial to plants because it

- A. kills pests that attack crops
- B. adds lime to the soil
- C. adds nitrates to the soil
- D. makes rain water available to plants

34. When large numbers of organisms share limited space and resources, the result is

- A. immigration
- B. symbiosis
- C. extinction
- D. competition

35. Even though some flowering plants contain accessory pigments which give them colours, they still contain the pigment

- A. melanin
- B. chlorophyll
- C. carotene
- D. xanthophyll

36. Which structure in the maize grain stores food?

- A. radicle.
- B. embryo
- C. cytoplasm
- D. endosperm

37. Which of the following statements is not associated with the theory of natural selection?

- A. There is a struggle for existence
- B. There is competition among the offspring
- C. The weaker offsprings are eliminated
- D. Food and other needs are abundant

38. Nitrogen fixing micro-organisms in leguminous plants live symbiotically in the

- A. branch roots
- B. tap roots

- C. root nodules
- D. root hairs

39. The epidermis of the mammalian skin is an example of a tissue because the cells

- A. prevent light from passing through them
- B. Have a similar structure and function
- C. prevent excessive loss of water
- D. are impregnated with keratin

40. The phenomenon whereby some organisms with certain features get established in an environment is known as

- A. Partial selection
- B. Artificial selection
- C. Natural selection
- D. Mutation

41. Who formulated the theory of natural selection in evolution?

- A. Gregor Mendel.
- B. Jean Lamarck
- C. Mathias Scheiden
- D. Charles Darwin

42. Which of the following statements is not correct of respiration?

- A. Gaseous exchange occurs by diffusion
- B. Oxygen combines with haemoglobin in the respiratory surface
- C. Carbon dioxide produced in the tissues is removed by the process of osmosis
- D. there are no special organs of respiration in plants

43. Which of the following constitutes the main internal tissues of a leaf?

- A. Cuticle
- B. Mesophyll
- C. Vascular tissue
- D. Lower epidermis

44. Which of the following is an autotrophic mode of nutrition?

- A. Chemosynthesis
- B. Saprophytism
- C. Parasitism
- D. Symbiosis

45. Which of the following structures differentiates an animal cell from a plant cell?

- A. Ribosomes
- B. Cell membrane
- C. Chloroplast
- D. Mitochondrion

46. The change in colour of the chameleon serves as a means of

- A. attraction to the opposite sex
- B. repulsion of the enemy
- C. a camouflage from a predator
- D. regulation of body temperature

47. At which of the following stages of mitosis do the two daughter chromosomes separate completely?

- A. early prophase
- B. telophase
- C. Anaphase
- D. late prophase

48. The role of dead organic matter in the soil is to

- A. Make the soil black.
- B. Increase the mineral salt content.
- C. Provide food for all living organisms
- D. Increase the acidity of the soil.

49. If the petals of a flowering plant are removed, which of the following processes is likely to be affected?

- A. Transpiration
- B. Pollination
- C. Germination
- D. Photosynthesis

50. Which of these substances is likely to be deficient in the diet of a person having goitre?

- A. Potassium
- B. Calcium
- C. Iodine
- D. Sodium

51. Banana, plantain and pineapple can be grouped together because they \_\_\_\_

- A. produce small seeds
- B. are multiple fruits
- C. produce suckers
- D. have runners

52. The structure in the cell that controls the movement of substances in and out of the cell is the \_\_\_\_\_

- A. Cytoplasmic membrane
- B. Nuclear membrane
- C. Cytoplasm
- D. Protoplasm

53. Which of the following statements is not true of osmotic process?

- A. There must be a selectively permeable membrane

B. The two solutions must be of different concentrations initially

C. It involves only the movement of water molecules

D. The two solutions are of equal concentration at the beginning of the experiment.

54. The pulmonary artery carries

- A. de-oxygenated blood from the right ventricle to the lungs
- B. oxygenated blood from the right ventricle to the lungs
- C. oxygenated blood from the left ventricle to the right auricle
- D. de-oxygenated blood from the left ventricle to the right auricle

55. Which of the following parts of the mammalian brain is involved in taking the decision to run rather than walk?

- A. Cerebellum
- B. Medulla oblongata
- C. Cranial nerves
- D. Cerebrum

56. Water rises most rapidly in

- A. Sandy soil.
- B. Clayey soil
- C. Sandy-loam soil
- D. Loamy soil

57. Euglena moves by:

- A. Whipping of its flagellum
- B. Beating of its cilia
- C. Rotating action of the flagella
- D. pushing out a jet of water from an organelle

58. The following life processes are common to both plants and animal except \_\_\_\_\_

- A. respiration
- B. growth
- C. reproduction
- D. photosynthesis

59. Which of the following statements is correct of hormones? Hormones are

- A. secreted into the blood through ducts
- B. secreted directly into the blood stream
- C. inactive chemical substances in the blood stream
- D. non-specific in their mode of action

60. Which of the following statements is not associated with the theory of natural selection?

- A. there is a struggle for existence  
 B. there is a competition among offspring  
 C. the weaker offspring are eliminated  
 D. Food and other needs are abundant
61. Water is necessary for a germinating seed because it  
 A. promotes aerobic respiration  
 B. activates the enzymes  
 C. wets the soil for proper germination  
 D. protects the seed from desiccation.
62. The farming practice by which an exhausted land is left for a number of years before cultivation is known as  
 A. crop rotation  
 B. continuous cropping  
 C. mono cropping  
 D. bush fallowing
63. Which of the following instruments is used for determining the turbidity of the water?  
 A. thermometer  
 B. Secchi Disc.  
 C. Rain Gauge.  
 D. Hygrometer
64. The surest way to combine the best qualities of both parents in the offspring is by  
 A. cross-breeding  
 B. in breeding  
 C. selective breeding  
 D. all of the above
65. Which of the following is not true about gene mutation?  
 A. it introduces new traits into a population  
 B. causes changes in the DNA  
 C. is a source of new genes  
 D. always affects the chromosome number
66. In unicellular organisms, essential nutrients can be transported directly to all parts of the body by the process of diffusion only because unicellular organisms have:  
 A. A large surface area to volume ratio  
 B. A large volume to surface area ration  
 C. Permeable cell membrane  
 D. Their body is always immersed in the nutrient material
67. Which of the following is not present in the nucleus of a cell?  
 A. Chromosomes  
 B. Nucleolus

- C. Mitochondrion  
 D. Genes

68. The structure in the cell that controls the movement of substance in and out of the cell is the  
 A. Cytoplasmic membrane  
 B. Nuclear membrane  
 C. Cytoplasm  
 D. Protoplasm
69. Which of these is not an excretory product of plant?  
 A. Tannin  
 B. Gum  
 C. Alkaloid  
 D. Sweat
70. Which of the following processes will not introduce carbon dioxide into the atmosphere?  
 A. Breathing  
 B. Photosynthesis  
 C. Respiration  
 D. Putrefaction

## ANSWERS TO BIOLOGY 2011/2012 QUESTIONS

1. C 2. D 3. D 4. A 5. A 6. B 7. C 8. B 9. A  
 10. B 11. D 12. C 13. D 14. D 15. C 16. D  
 17. D 18. D 19. A 20. D 21. C 22. D 23. B  
 24. A 25. C 26. C 27. B 28. B 29. B 30. A  
 31. A 32. B 33. C 34. D 35. B 36. D 37. D  
 38. C 39. B 40. C 41. D 42. C 43. B 44. A  
 45. C 46. C 47. C 48. B 49. B 50. C 51. C  
 52. A 53. D 54. A 55. D 56. A 57. A 58. D  
 59. B 60. D 61. B 62. D 63. B 64. A 65. D  
 66. A 67. C 68. A 69. D 70. B

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# 2011/2012 MATHEMATICS POST UTME QUESTIONS

1. Find the average of the first four prime numbers greater than 10

- A. 20
- B. 11
- C. 17
- D. 15

2. Given that  $P/r$  and  $p = 3$  when  $r = 16$ , find the value of  $r$  when  $p = /r$

- A. 94
- B. 45
- C. 72
- D. 324

3.  $4 \times 10^{-5} = ?$

- A. - 40,000
- B. - 200
- C. 0.0004
- D. 0.00004

5. The quadratic equation whose roots are at  $x = 3$  and  $x = 5$  is given by

- A.  $(x - 3)(x - 5) = 1$
- B.  $(x + 3)(x + 5) - 9 = (x + 3)(x + 5) - 25$
- C.  $(x + 3)(x + 5) = 0$
- D.  $x^2 - 8x = -15$

6. There are 15 balls in a box: 8 balls are green, 4 are blue and 3 are white. Then 1 green and 1 blue balls are taken from the box and put away. What is the probability that a blue ball is selected at random from the box?

- A.  $3/13$
- B.  $4/15$
- C.  $3/15$
- D.  $4/13$

7. If  $-3/(a - 3) = 3/(a + 2)$ , then  $a = ?$

- A. -3
- B. -2
- C.  $1/2$
- D. 2

8. What is the average of  $7/8$  and  $3/4$ ?

- A.  $13/8$
- B.  $5/6$
- C.  $5/3$
- D.  $13/16$

9. If the hypotenuse of a right triangle is 10 inches long and one of its legs is 5 inches long, how long is the other leg?

- A. 5
- B.  $5\sqrt{3}$
- C.  $5\sqrt{5}$
- D. 75

10. If  $8y = 3x - 11$ , then  $x = ?$

- A.  $(88/3)y$
- B.  $(8/3)y + 11$
- C.  $(8/3)y - 11$
- D.  $(8y + 11)/3$

11. Which of the statements describes the solution set for  $-2(x + 8) = -2x + 20$ ?

- A.  $x = -2$  only
- B.  $x = 0$  only
- C.  $x = 20$  only
- D. There are no solutions for this equation.

12. When graphed in the  $(x,y)$  coordinate plane, at what point do the lines  $2x + 3y = 5$  and  $x = -2$  intersect?

- A.  $(-2,0)$
- B.  $(-2,5)$
- C.  $(0,5/3)$
- D.  $(-2,3)$

13. Which of the following is equal to  $\sqrt{45}$

- A. 15
- B.  $5\sqrt{3}$
- C.  $9\sqrt{5}$
- D.  $3\sqrt{5}$

14. If  $a = 3$ , then  $2 / (1/7 + 1/a) = ?$

- A. 5
- B.  $21/10$
- C. 20
- D.  $21/5$

15. If the expression  $x^3 + 2hx - 2$  is equal to 6 when  $x = -2$ , what is the value of  $h$ ?

- A. 0
- B. -2
- C. -4
- D. 4

17. If the domain of function  $f$  given by  $f(x) = -x^2 + 6x$  is given by the interval  $[0, 6]$ , then the range of  $f$  is given by the interval

- A.  $[0, 9]$
- B.  $[0, 6]$
- C.  $[0, 3]$
- D.  $[3, 6]$

18. The  $x$  intercepts of the graph of  $y = -x^2 + 3x + 18$  are given by

- A. (6, -3)  
 B. (-3, 6)  
 C. (-3, 0) and (6, 0)  
 D. (3, 0) and (-6, 0)

19. The sum of the first  $n$  terms of a linear sequence  $S_n = n^2 + 2n$ . Determine the general term of the sequence

- A.  $n+1$   
 B.  $2n+1$   
 C.  $3n+1$   
 D.  $4n+1$

20. The length of a rectangle is 3 times its width. If the width of the rectangle is 5 inches, what is the rectangle's area, in square inches?

- A. 15  
 B. 20  
 C. 30  
 D. 75

21. What is the slope of the line  $4x = -3y + 8$

- A. 4  
 B.  $-3/4$   
 C.  $-4/3$   
 D. 8

22. The length of a rectangle is 3 times its width. If the width of the rectangle is 5 inches, what is the rectangle's area, in square inches?

- A. 15  
 B. 20  
 C. 30  
 D. 75

23. If  $1.56x = 2$ , then  $x = ?$

- A.  $\ln 1.56 / \ln 2$   
 B.  $\ln 2 / \ln 1.56$   
 C.  $2 / \ln 1.56$   
 D.  $\ln 2 / 1.56$

24. A machine valued at ₦20,000 depreciates by 10% every year. What will be the value of the machine at the end of two years?

- A. ₦16,200  
 B. ₦14,000  
 C. ₦12,000  
 D. ₦16,000

25.  $x^3 - 2x^2 + 4x - 8 = 0$  if  $x = ?$

- A. 4  
 B. 8  
 C. 2

- D. -8  
 E. -4

26. The sum of integers from 4 to 8 plus the sum from 12 to 16 is

- A. 80  
 B. 120  
 C. 100  
 D. 110  
 E. 90

27. If the diagonals of a quadruplet are equal then the quadruplet is a

- A. square  
 B. parallelogram  
 C. rhomboid  
 D. trapezoid  
 E. rectangle

28. The sum of four powers of  $q$  starting from power 0 is 85. Then  $q = ?$

- A. 2  
 B. 3  
 C. 4  
 D. 5  
 E. 6

Amount (₦)	3	6	9	12	15	18
No. of students	3	9	6	15	3	12

29. What is the mode in the above table

- A. ₦3  
 B. ₦6  
 C. ₦9  
 D. ₦12  
 E. ₦15

30. Find the median of the distribution

- A. ₦3.00  
 B. ₦9.00  
 C. ₦12.00  
 D. ₦15.00  
 E. ₦18.00

31. Factorize:  $3a^2 - 11a + 6$

- A.  $(3a-2)(a-3)$   
 B.  $(2a-2)(a-3)$   
 C.  $(3a-2)(a+3)$   
 D.  $(3a+2)(a-3)$   
 E.  $(2a-3)(a+2)$

32. The number of telephone call  $N$  between two cities A and B varies directly as the population  $P_A, P_B$  in A and B respectively

and inversely as the square of the distance  $D$  between  $A$  and  $B$ . which of the following equations represents this relation?

- A.  $N = kp_a/d^2 + cp_n/d^2$
- B.  $N = KP_A P_n / D^2$
- C.  $N = kDP_A P_B$
- D.  $N = kDP_A + CDP_B$
- E.  $N = kD^2 P_A P_B$

33. In a soccer competition in one season, a club had scored the following goals: 2, 0, 3, 3, 2, 1, 4, 0, 0, 5, 1, 0, 2, 2, 1, 3, 1, 4, 1 and 1. The mean, median and mode are respectively \_\_\_\_\_

- A. 1, 1.8 and 1.5
- B. 1.8, 1.5 and 1
- C. 1.8, 1 and 1.5
- D. 1.5, 1 and 1.8

35.  $x^5 - 3x^4 + 4x - 12 = 0$  if  $x = ?$

- A. 4
- B. 3
- C. 2
- D. -8

37. If opposite sides of a quadruple are equal then it is a

- A. square
- B. trapezoid
- C. parallelogram
- D. rhomboid
- E. no such quadruple

38. The sum of even numbers from 12 to 18 is

- A. 80
- B. 40
- C. 70
- D. 60
- E. 90

39. The sum of powers of 3 starting from power 2 is 117. Then the number of added powers is

- A. 4
- B. 2
- C. 3
- D. 5
- E. 1

40. What is the relationship between  $2ab$  and  $a+b$  where  $a, b$  are numbers?

- A.  $2ab \geq a+b$
- B.  $2ab < a+b$
- C.  $2ab \neq a+b$
- D.  $2ab = a+b$
- E.  $2ab > a+b$

41. There are four visitors in a party. There are two tables with two seats each. In how many different ways can these guests sit down?

- A. 16
- B. 24
- C. 20
- D. 12
- E. 18

42. What is the modal goal scored

- A. 0
- B. 1
- C. 2
- D. 5

44. The value of  $3/2 \times 10/21 \times 4/22 \times 77/5 = ?$

- A. 5
- B.  $1/5$
- C. 2
- D. 7

45.  $\tan x + \cot x = ?$

- A.  $\sin 2x$
- B.  $2/\sin 2x$
- C.  $1/\cos 2x$
- D.  $\cos 2x$

47.  $(6\sqrt{(3)^{12}})^{1/2} = ?$

- A. 9
- B.  $3^{1/2}$
- C. 3
- D. 27

48. Express 0.00562 in standard form

- A.  $5.62 \times 10^{-3}$
- B.  $5.62 \times 10^{-2}$
- C.  $5.62 \times 10^2$
- D.  $5.62 \times 10^3$

49. If  $32x = 27$ , Find  $x$

- A. 1
- B. 1.5
- C. 4.5
- D. 18

50. The population of a village is 5,846. Express this number to three significant figures

- A. 5850
- B. 5846
- C. 584
- D. 585

53. Simplify  $\log_4 10 + \log_5 10$

- A. 3



- B. 1  
C. 2  
D. 4

No. of goals	0	1	2	3	4	5
No of matches	3	5	7	4	1	0

54. What is the mean goal scored in the table above?

- A. 0.75  
B. 1.75  
C. 1.9  
D. 2

55. 
$$\frac{(1/4 - 1/5)/(1/3 - 1/4) \times (1/2 - 1/3)}{(1 - 1/5) \times 5} = ?$$

- A. 2  
B. 1/6  
C. 1  
D. 4  
E. 3

56. ₦1, 000,000.00 is put for 4% yearly interest for three years with the interest added at the end of each

year to the base. At the end of the three years the money will be

- A. ₦1, 122,416.00  
B. ₦1, 124,864.00  
C. ₦1, 241,232.00  
D. ₦1, 422,232.00  
E. ₦1, 441,122.00

57. Joe gets ₦40.00 to buy erasers for ₦5.00 each, pencils for ₦7.00 each and rulers for ₦8.00 each so that minimum number of items are bought and all the money is spent, then the number of pencils bought is

- A. 6  
B. 3  
C. 2  
D. 1  
E. 4

58.  $\log ax^2 - c \log ax = 0$  then c

- A. 4  
B. 3  
C. 5  
D. 2  
E. -3

59.  $x^3 - 3x^2 + 4x - 12 = 0$  if  $x = ?$

- A. 4  
B. 8  
C. 2

- D. 3  
E. -4

61. Given that  $y = px + q$  and  $y = 5$  when  $X = 3$ , while  $y = 4$  when  $x = 2$  find the values of p and q

- A.  $p = 1, q = 3$   
B.  $p = 1, q = 2$   
C.  $p = -2, q = 3$   
D.  $p = 3, q = -2$

62. If  $y - 3/2 < 2y - 1/3$ , which of the following is true?

- A.  $y > 7$   
B.  $y < -7$   
C.  $y > -7$   
D.  $y < 7$

63. A boy estimated his transport fare for a journey as ₦190 instead of ₦200. Find the percentage error in his estimate.

- A. 95%  
B. 47.5%  
C. 5.26%  
D. 5%

64. The value of  $3/2 \times 10/21 \times 7/5 = ?$

- A. 5  
B.  $1/5$   
C. 1  
D. 7

65. There are three boys and three girls in a party. In how many different ways can they dance?

- A. 12  
B. 6  
C. 9  
D. 8

66. If a sweet cost ₦2.00, a chocolate costs ₦3.00 and a cake costs ₦5.00 then buy from each item at least one and as many items as possible from N20.00. The number of sweets you buy then is

- A. 10  
B. 6  
C. 8  
D. 6

68.  $\log x \log x = 1$  where  $\log x = \log_{10} x$ . Then  $x = ?$

- A. 10 or  $1/10$   
B. 0  
C. 2  
D. 3

69. If the elements of a series are 1, 2, 3, 5, 8, 13 ... then the next element is

- A. 22
- B. 19
- C. 16
- D. 21

70.  $\log_{27} x = ?$

- A.  $2\log_9 x$
- B.  $3\log_3 x$
- C.  $2\log_6 x$
- D.  $2\log_3 x$

## ANSWERS TO MATHEMATICS 2011/2012 QUESTIONS

1. D 2. B 3. D 4. B 5. D 6. A 7. C 8. D 9. B  
10. D 11. D 12. D 13. D 14. D 15. C 16. C  
17. A 18. C 19. B 20. D 21. D 22. D 23. B  
24. A 25. C 26. C 27. E 28. C 29. D 30. C  
31. A 32. B 33. B 34. D 35. B 36. A 37. C  
38. D 39. C 40. A 41. B 42. C 43. D 44. C  
45. B 46. D 47. C 48. A 49. B 50. D 51. A  
52. B 53. C 54. B 55. C 56. B 57. C 58. D  
59. D 60. B 61. B 62. C 63. D 64. C 65. B  
66. C 67. C 68. A 69. D 70. B

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# 2014/2015 UNICAL POST UTME QUESTIONS

## ENGLISH LANGUAGE

**Choose the correct preposition to fill the blank spaces**

1. She wore a hat \_\_\_\_\_ blue shirt  
A. on  
B. with  
C. in  
D. within
2. The accident \_\_\_\_\_ the bridge was not serious  
A. on  
B. in  
C. up  
D. at
3. The child seemed afraid \_\_\_\_\_ the noise  
A. by  
B. at  
C. of  
D. with

**Choose that is correctly spelled from the following**

4. A. enbarass  
B. embarras  
C. embarrass  
D. enbarras
5. A. mispeled  
B. mispeled  
C. misspelled  
D. misspelled
6. A. ressind  
B. rescend  
C. reccind  
D. rescind
7. A. yeild  
B. yield  
C. yeld  
D. yild

**Choose the correct plural form of the following underlined words**

8. Mouse:  
A. mouses  
B. muses

- C. mice  
D. mices

9. Passer-by:  
A. passer-bys  
B. passers-bys  
C. passers-by  
D. passer-by

10. Corps:  
A. corpes  
B. corps  
C. corpsses  
D. corpsses

11. Hero:  
A. heros  
B. heroses  
C. heroin  
D. heroes

**Choose the correct degree of comparison that best fills the blank space**

12. Amaka is the \_\_\_\_\_ girl in the house  
A. clumsiest  
B. clumsier  
C. clumsy  
D. clumser
13. We arrived at the airport \_\_\_\_\_  
A. earlier  
B. earliest  
C. early  
D. earlest
14. My potato chips are \_\_\_\_\_ than yours  
A. crisp  
B. crisper  
C. crispest  
D. crispiest

**Choose the option opposite in meaning to the underlined word**

15. His bad choices in life made failure inevitable  
A. preventable  
B. sure  
C. effective  
D. possible

16. The principal is a quintessential example of a responsible leader

- A. enviable
- B. sole
- C. best
- D. worst

17. Politician should not say things that are inimical to the stability of the nation

- A. helpful
- B. hopeful
- C. harmful
- D. disagreeable

**Choose the word that best completes each of the following sentence**

18. This is not an \_\_\_\_\_ time to travel because lectures are going on

- A. audacious
- B. intended
- C. auspicious
- D. authentic

19. Roger was afraid to stay in his small prison cell because of his \_\_\_\_\_

- A. homophobia
- B. claustrophobia
- C. gynophobia
- D. pedophobia

20. The site of crash littered with dead bodies presented a \_\_\_\_\_ sight

- A. deadly
- B. hasty
- C. pleasant
- D. grisly

### MATHEMATICS

1. Which of the following statement Is not true?

- A.  $A \cap U = A$
- B.  $A \cap U = \emptyset$
- C.  $A \cap \emptyset = \emptyset$
- D.  $A \cap A = A$

2. The following are the scores of 10 students in a test of 20 marks; 15, 16, 17, 13, 16, 8, 5, 16, 19, 17. What is the modal score?

- A. 19
- B. 15
- C. 16
- D. 13

3. If  $\cos \theta = \frac{a^2 - b^2}{2ab}$ , find  $\operatorname{cosec} \theta$

- A.  $\frac{a^2 - b^2}{ab}$
- B.  $\frac{(a^2 + b^2)^2}{2ab}$
- C.  $\frac{a^2 + b^2}{ab}$
- D.  $\frac{2ab}{a^2 + b^2}$

### PHYSICS

1. Which of the following is not a measurable parameter of sound?

- A. intensity
- B. pressure
- C. reflection
- D. loudness

2. A target of 100m from a gun and the nozzle speed is 400m/s. what angle of projection will ensure a hit?

- A.  $5^\circ$
- B.  $1^\circ$
- C.  $7^\circ$
- D.  $6^\circ$

3. In walking across a carpet, you'll acquire a net negative charge of 100u

- C. How many excess electrons does y have?
- A.  $5.2 \times 10^{14}$
- B.  $6.2 \times 10^{14}$
- C.  $6.2 \times 10^{20}$
- D.  $5.2 \times 10^{20}$

4. An ammeter has an internal resistance of 10hms and a full scale of deflection of 100mA. What value of resistance will be required to make the ammeter measure 800mA?

- A. 1.43ohms
- B. 1.0ohms
- C. 0.43ohms
- D. 2.43ohms

### CHEMISTRY

1. Allotropes of an element differ in their

- A. chemical properties
- B. mass number
- C. electronic configuration
- D. physical properties

2. The atom of an element X has two electrons in its outermost shell. What is the formula of the compound formed when X combines with aluminium?

- A.  $AlX_2$
- B.  $Al_2X$

- C.  $Al_2X_2$   
D.  $Al_2X_3$

3. Which of the following compound is readily soluble in water?

- A. CuO  
B. AgCl  
C.  $Na_2SO_4$   
D.  $CaCO_3$

4. Calculate the mass of  $ZnSO_4$  produced when excess  $ZnCO_3$  is added to  $500cm^3$  of 4.00M of  $H_2SO_4$  [ $ZnSO_4 = 161g\text{mol}^{-1}$ ]

- A. 0.200g  
B. 32.2g  
C. 1.29g  
D. 39.0g

### BIOLOGY

1. The following are examples of poikilothermic animals except\_\_\_\_\_?

- A. lizards  
B. Birds  
C. snakes  
D. frogs

2. The biological function of  $CO_2$ ,  $H_2O$  and  $NH_3$  from dead plant and animal tissues by the activities of micro-organisms is called\_\_\_\_\_?

- A. petrification  
B. nitrification  
C. denitrification  
D. nitrogen fixation

3. The centre in the mammalian brain that is responsible for temperature regulation is\_\_\_\_\_?

- A. cerebrum  
B. cerebellum  
C. diencephalon  
D. hypothalamus

4. When the body fluid of an organism has the same concentration as that of the external medium. Such medium is said to be\_\_\_\_\_?

- A. hypotonic  
B. hypertonic  
C. isotonic  
D. osmotic

### INFORMATION AND COMMUNICATION TECHNOLOGY – ICT

1. The computer system is made up of \_\_\_\_\_units

- A. 4  
B. 7  
C. 3  
D. 2

2. What is the value of  $64_{10}$  in binary?

- A.  $1000000_2$   
B.  $110000_2$   
C.  $10000_2$   
D.  $11000001_2$

3. What are the components of a computer system?

- A. hardware and software  
B. CPU and monitor  
C. RAM and ROM  
D. disk and RAM

4. Choose which of these is a computer system type

- A. google  
B. hybrid  
C. RAM  
D. main frame computer

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## **ANSWERS TO 2014/2015 QUESTIONS**

### **ENGLISH LANGUAGE**

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

### **MATHEMATICS**

1. B 2. C 3. C

### **PHYSICS**

1. B 2. D 3. D 4. No correct option

### **CHEMISTRY**

1. C 2. C 3. C 4. A

### **BIOLOGY**

1. B 2. B 3. D 4. D

### **INFORMATION AND COMMUNICATION TECHNOLOGY – ICT**

1. A 2. D 3. A 4. D

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# 2015/2016 UNICAL POST UTME QUESTIONS

## ENGLISH LANGUAGE

### Choose the correctly spelt word from the following

1. A. achivement  
B. achevement  
C. achievement  
D. acheivement

2. A. hight  
B. hait  
C. height  
D. haght

3. A. risind  
B. rescind  
C. recind  
D. riscend

4. A. wholly  
B. wholy  
C. wohly  
D. hwolly

### Choose the word that is closest in meaning to the underlined word

5. His statement are admissible as evidence in court  
A. faulty  
B. inconclusive  
C. false  
D. acceptable

6. To say the last, Janet's behaviour is infantile  
A. crazy  
B. bullish  
C. childish  
D. mature

7. The senator is still relishing his victory at the polls  
A. enjoying  
B. pondering  
C. dissatisfied  
D. surprised

### Choose the preposition that correctly fills the blanks

8. Under the caste system, it is not befitting to marry \_\_\_\_\_ one's social class  
A. behind  
B. in  
C. from  
D. beneath

9. The drumming drove the dancers \_\_\_\_\_ a frenzy  
A. toward  
B. into  
C. with  
D. inside

10. Mr. Ugbong live \_\_\_\_\_ the street  
A. by  
B. In  
C. at  
D. up

### Choose the comparative that correctly fills the blanks

11. Adie is one of the \_\_\_\_\_ students in his class  
A. smart  
B. smartest  
C. smarter  
D. smartier

12. Mr. Emeka is slightly \_\_\_\_\_ than Mr. Okoro  
A. crazy  
B. craziest  
C. crazier  
D. crazily

13. In terms of importance, he was the \_\_\_\_\_  
A. least  
B. less  
C. lesser  
D. little

### Choose the correct plural form of the following words

14. Valley  
A. vallies  
B. valleyses  
C. valles  
D. valleys

15. Synopsis  
 A. synopsises  
 B. synopsis  
 C. synopsises  
 D. synopes

16. Studio  
 A. studia  
 B. studios  
 C. studioes  
 D. studum

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

17. The candidate's claims about his campaign manager were spurious  
 A. false  
 B. true  
 C. honest  
 D. dishonest
18. The business tycoon was surprised that I spurned his love advances  
 A. accepted  
 B. rejected  
 C. enjoyed  
 D. despised

Select the correct phonetic transcription for the listed words

19. Flay  
 A. /flai/  
 B. /fleɪ/  
 C. /floi/  
 D. /floo/
20. Hiss  
 A. /his/  
 B. /hi:s/  
 C. /hiss/  
 D. /hes/

**MATHEMATICS**

21. Find the quotient if  $x^4 - y^4$  is divided by  $x^2 + y^2$   
 A.  $x + y$   
 B.  $(x - y)(x + y)$   
 C.  $x^2 - y$   
 D.  $y^2 - x^2$
22. A class of 15 students, the students offers either physics or chemistry or both. If 11 students offer physics and 9 offers chemistry, what is the probability that a

- student chosen at random offers both physics and chemistry  
 A.  $\frac{1}{4}$   
 B.  $\frac{3}{5}$   
 C.  $\frac{3}{4}$   
 D.  $\frac{1}{3}$

23. If  $y = 2(\sqrt{x^2 + M})/3N$ , make X the subject of the formula

24. PQR is an equilateral triangle with sides  $2\sqrt{3}$ cm. calculate its height  
 A. 1.7cm  
 B. 3.2cm  
 C. 3.9cm  
 D. 3.0cm

**BIOLOGY**

25. The following are examples of animals in the phylum-Mollusca except\_\_\_\_\_?  
 A. snail  
 B. earthworm  
 C. periwinkle  
 D. blam
26. In a plant, the tissues responsible for conducting water and mineral salts from the soil to different parts of the plants are\_\_\_\_\_?  
 A. xylem  
 B. cambium  
 C. parenchyma  
 D. sclerenchyma
27. Meiosis is a type of  
 A. cell division  
 B. respiration  
 C. movement in cells  
 D. living thing
28. The two basic types of ecosystem are\_and\_\_\_?  
 A. forest and desert  
 B. grasslands and farmlands  
 C. freshwater and marine ecosystem  
 D. terrestrial and aquatic ecosystem

**CHEMISTRY**

29. An endothermic reaction is one during which heat is\_\_\_\_\_?  
 A. absorbed  
 B. adsorbed



- C. liberated  
D. complexed

30. The solubility in mol/dm<sup>3</sup> of 40g of CuSO<sub>4</sub> dissolved in 100cm<sup>3</sup> of water at 180° is? [Cu = 64, S = 32, O = 16]

- A. 0.25  
B. 1.25  
C. 2.00  
D. 2.5

31. A researcher added a measured amount of HCL gas to pure water at 25°C and obtained a solution (H) = 3.0 x 10<sup>-4</sup>. What was the pH of the solution?

- A. 3.5  
B. 3.0  
C. 4.0  
D. 1.0

32. Which of the following cannot be obtained by fractional distillation of petroleum?

- A. ethane  
B. methane  
C. hydrogen  
D. butane

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## 2015/2016 POST UTME SCREENING ANSWERS

### ENGLISH LANGUAGE

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

### MATHEMATICS

21. D  
22. D  
23.  $X = \sqrt{9N^2Y^2 + 4M}/2$   
24. D  
25. D  
26. A  
27. A  
28. D  
29. A

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# 2017/2018 UNICAL POST UTME QUESTIONS

## Answer all questions

1. The principal was not aware \_\_\_\_\_ the visitors on their arrival.

- A. to have met
- B. that he should have met
- C. that he met
- D. to meet the visitors on their arrival

2. John was glad \_\_\_\_\_

- A. were the exams over
- B. the exams were over
- C. the exams to be over
- D. at the exams which over

3. Patrick was afraid \_\_\_\_\_

- A. whether he had failed
- B. to have failed
- C. he has failed
- D. he had failed

4. Patrick was wrong \_\_\_\_\_

- A. he contradicted the teacher
- B. to contradict the teacher
- C. contradicted the teacher
- D. to be contradicted the teacher

5. Doing snippets of work' each day is not \_\_\_\_\_ anyone.

- A. very satisfactory
- B. really satisfactory to very
- C. really very satisfactory to
- D. very really satisfactory to

6. At last the aircraft was able to take off. It \_\_\_\_\_ for two hours by a fault in the electrical system.

- A. has been delayed
- B. delayed
- C. had been delayed
- D. is delayed

7. Mr Momoh \_\_\_\_\_ hard for many years before he got promotion.

- A. had been worked
- B. had been working
- C. has worked
- D. has been working

8. I am sorry \_\_\_\_\_ to the meeting last night.

- A. not come
- B. I didn't come

C. to come

D. I hadn't come

9. John felt sorry \_\_\_\_\_ the poor people who hadn't enough to eat.

- A. for
- B. because
- C. of
- D. that

10. Mary was unable \_\_\_\_\_ the work in time.

- A. she completed
- B. she couldn't complete
- C. complete
- D. not to complete

11. Mr. Olayinka was delighted \_\_\_\_\_

- A. you to come
- B. that you came
- C. you not to come
- D. did you come

12. Food prices \_\_\_\_\_ a lot since last year.

- A. have gone up
- B. had gone up
- C. went up
- D. go up

13. The Romans once \_\_\_\_\_ most of Europe and North Africa for many years.

- A. have ruled
- B. had been ruling
- C. rule
- D. ruled

14. Eze has not heard anything of his sister Ada since she \_\_\_\_\_ to the United Kingdom.

- A. has gone
- B. had gone
- C. had been going
- D. went

15. Everyone looked \_\_\_\_\_ to peter to give a lead.

- A. to
- B. out
- C. up
- D. at

16. Everyone looked \_\_\_\_\_ Peter as their leader

- A. at
- B. on

- C. for  
D. up

17. Mary would never have finished her homework if Patrick hadn't helped her \_\_\_\_\_

- A. in  
B. with  
C. out  
D. off

18. John spent hours looking \_\_\_\_\_ his dictionary, he couldn't find it.

- A. at  
B. in  
C. for  
D. to

19. Everyone looked \_\_\_\_\_ to Peter as a great leader

- A. up  
B. down  
C. on  
D. for

20. At the beginning of the period, the geography master fired \_\_\_\_\_ a series of question about South East Asia

- A. up  
B. on  
C. away  
D. off

21. A 12V battery supplying a current of 20A was used to melt 1.5kg of ice at 0°C.

calculate the time required if the latent heat of fusion of ice is  $336 \times 10^1 \text{J/kg}$

- A. 35.0 min  
B. 3.5 min  
C. 76 min  
D. 21.0 min

22. The light from the sun reaches the earth mainly by \_\_\_\_\_

- A. convection  
B. conduction  
C. radiation  
D. reflection

23. One valid assumption of the kinetic theory of gases is that:

- A. the molecules are in random motion and the number of collision is constant  
B. the number of molecules increases with the pressure  
C. the molecules of the gas are all identical and are very small in size

D. the number of molecules increases with temperature

24. An astronomical telescope is said to be in normal adjustment when the

- A. eye is accommodated  
B. focal length of the objective lens is longer than that of the eye pie  
C. final image is at the near point of the eye  
D. final image is at infinity

25. Which of the following parts of a cell is living?

- A. cell wall  
B. calcium oxalate  
C. food vacuole  
D. mitochondria

26. Cells without an organized nucleus are called \_\_\_\_\_

- A. heterokaryote  
B. eukaryote  
C. prokaryote  
D. synkaryote

27. The sites for energy transfer within a cell are known as \_\_\_\_\_

- A. Golgi apparatus  
B. parenchyma  
C. mitochondria  
D. nucleolus

28. Food and dissolved oxygen pass from the water directly into the amoeba by a process called \_\_\_\_\_

- A. transport  
B. diffusion  
C. fission  
D. transpiration

29. Which one of these functions is not performed by the nervous system?

- A. receive sensory input from internal and external environment  
B. digestion  
C. integration  
D. response to stimuli

30. In man, gas exchange occurs in the \_\_\_\_\_

- A. heart  
B. white blood cells  
C. lungs  
D. kidney

31. Find the identity element of the set S under the binary Operation \* defined by  $a*b = 2ab$

- A.  $-\frac{1}{2}$
- B. 1
- C. 0
- D.  $\frac{1}{2}$
- E. -1

32. Differentiate  $y = 7x^4 \cos x - 5$  with respect to  $x$ .

- A.  $28x^4 + \sin x$
- B.  $28x^4 - \cos x$
- C.  $28x^3 - \sin x$
- D.  $28x - \sin x$
- E.  $28x^5 - \sin x$

33. Find the value of  $n$  if  $30 \times ({}^nC_5) = {}^nP_4$ .

- A. 5
- B. 2
- C. 3
- D. 6
- E. 8

34. What value of  $x$  satisfies the equation:

$$3^{2x+3} - 3^{x+2} - 3^{x+1} + 1 = 0$$

- A. (-2, -1)
- B. (2, 1)
- C. (-2, 1)
- D. ( $\frac{1}{9}, \frac{1}{3}$ )
- E. (0, 1)

35. What is the quotient and remainder when  $x + 2$  divides  $2x^2 - 3x + 2$ ?

- A.  $(x + 2, 16)$
- B.  $(x + 2, 2x - 7)$
- C.  $(2x - 7, 16)$
- D.  $(2x + 7, 16)$
- E.  $(2x + 7, 16)$

36.  $25\text{cm}^3$  of a gas  $x$  contains  $z$  molecules at  $15^\circ\text{C}$  and  $75\text{mmHg}$ . How many molecules will  $25\text{cm}^3$  of another gas  $y$  contain at the same temperature and pressure?

- A.  $2y$
- B.  $2z$
- C.  $z$
- D.  $y$

37. What mass of water is produced when  $8.0\text{g}$  of hydrogen reacts with excess oxygen?

- A.  $36.0\text{g}$
  - B.  $8.0\text{g}$
  - C.  $72.0\text{g}$
  - D.  $16.0\text{g}$
- (H = 1, O = 16)

38. A particle that contains 9 proton, 10 neutrons and 10 electrons is a \_\_\_\_\_

- A. negative atom ion
- B. positive ion
- C. neutral atom of a non-metal
- D. neutral atom of metal

39. Cancerous growths are cured by exposure to \_\_\_\_\_

- A.  $\gamma$ -rays
- B.  $\beta$ -rays
- C.  $\alpha$ -rays
- D. x-rays

40. An oxide  $\text{XO}_2$  has a vapour density of 32. What is the atomic mass of  $x$ ?

- A. 32
- B. 20
- C. 14
- D. 12

## 2017/2018 POST UTME SCREENING ANSWERS

1. C 2. B 3. C 4. B 5. C 6. B 7. C 8. B 9. A  
10. C 11. B 12. C 13. D 14. D 15. C 16. B  
17. C 18. C 19. A 20. B 21. D 22. D 23. D  
24. B 25. D 26. B 27. C 28. D 29. B 30. C  
31. D 32. C 33. E 34. A 35. C 36. C 37. C  
38. A 39. D 40. A

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# 2018/2019 UNICAL POST UTME QUESTIONS

**Identify the word closest in meaning to the ones underlined.**

- I woke up feeling rather queer.  
A. fine  
B. strange  
C. strong  
D. tired
- If he declines the offer, it will be better for him.  
A. ignores  
B. denies  
C. Snubs  
D. rejects
- Our club encourages benevolence.  
A. affluence  
B. sincerity  
C. Charity  
D. association
- Such utterances are inimical to the peaceful co-existence of the two communities.  
A. unhelpful  
B. unimportant  
C. harmful  
D. useless

**Choose the word(s) opposite in meaning to the underlined word(s)**

- Our government is making determine efforts to eradicate illiteracy  
A. compulsory  
B. ineffective  
C. innocent  
D. unreliable
- Nnamdi Azikiwe University has a large intake of student each year  
A. rejection  
B. product  
C. furiously  
D. turn-out
- Rita flogged the girl reluctantly  
A. eagerly  
B. calmly  
C. furiously  
D. laboriously

- The judge blamed the plaintiff for misleading the court  
A. defendant  
B. complaint  
C. accused  
D. prosecution

- The demonstrators have refused to call off their action  
A. consolidate  
B. start  
C. resume  
D. end

- The policemen was asked to investigate the matter  
A. ask about  
B. forget about  
C. examine  
D. inquire about

**Choose the words or phrases which best fill(s) the gap(s)**

- There's \_\_\_\_\_ ventilation in this room; that's why you don't breathe well  
A. few  
B. little  
C. a few  
D. a little
- Whenever he puts the light on, someone \_\_\_\_\_ to disturb him.  
A. came  
B. has come  
C. comes  
D. would come
- It \_\_\_\_\_ be taken for repair after all; it's working again  
A. couldn't  
B. shouldn't  
C. mightn't  
D. needn't
- The visit of the patron of the club \_\_\_\_\_ the words of the players.  
A. elated  
B. induced  
C. boasted  
D. boosted
- The man advised his children not to give \_\_\_\_\_ to the temptations of the city.

- A. off
- B. up
- C. in
- D. out

16. \_\_\_\_\_ were sent to the library by the English teacher.

- A. I and Udoh
- B. Udoh and me
- C. Udoh and I
- D. myself and Udoh

17. You're not too tired to continue \_\_\_\_\_?

- A. are you
- B. isn't it
- C. can't you
- D. is it

18. Hardly had the journey started \_\_\_\_\_ the engine developed a fault.

- A. that
- B. when
- C. than
- D. soon

19. The principal was not aware \_\_\_\_\_ the visitors on their arrival

- A. to have met
- B. that he should have met
- C. that he met
- D. to meet the visitors on their arrival

20. John was glad \_\_\_\_\_

- A. were the exams over
- B. the exams were over
- C. the exams to be over
- D. at the exams which over

21. The process by which complex organic molecules is broken down to simpler forms to release energy stored in them is known as\_\_

- A. anabolism
- B. commensalism
- C. photosynthesis
- D. catabolism
- E. symbiosis

22. The number of moles present in 1kg of solvent is called its:

- A. molality
- B. molarity
- C. normality
- D. formality
- E. none of the above

23. The most electronegative element in the following is:

- A. Bromine
- B. Oxygen
- C. Sodium
- D. Fluorine
- E. Potassium

24. Which of the following chemicals is most commonly used as a bleaching agent?

- A. sodium hypochlorite
- B. alcohol
- C. chloroform
- D. benzene
- E. potassium hydroxide

25. The process of converting starch to ethanol is known as:

- A. distillation
- B. cracking
- C. fermentation
- D. oxidation
- E. hydrolysis

26. What is the percentage of sulphur in sulphur (IV) oxide.

(mass of S = 32, O = 16)

- A. 66%
- B. 50%
- C. 25%
- D. 40%
- E. None of the above

27. A 10g mass placed on the pan of a spring balance causes an extension of 5 cm. if a 15g mass is placed on the pan of the same spring balance the extension is\_\_\_\_\_

- A. 3.3 cm
- B. 6.5 cm
- C. 7.5 cm
- D. 10.8 cm
- E. 15.0 cm

28. The force with which an object is attracted to the earth is it's \_\_\_\_\_

- A. acceleration
- B. mass
- C. gravity
- D. weight
- E. momentum

29. A train has an initial velocity of 44m/s and an acceleration of  $-4\text{m/s}^2$ , its velocity after 10s is\_\_\_\_\_

- A. 2m/s
- B. 4m/s
- C. 8m/s
- D. 12m/s
- E. 16m/s

30. A man of mass 50kg ascends a flight of stairs 5m high in 5 seconds. If the acceleration due to gravity is  $10\text{m/s}^2$ , the power expended is \_\_\_\_\_

- A. 500W
- B. 400W
- C. 250W
- D. 200W
- E. 100W

31. Longitudinal waves do not exhibit \_\_\_\_\_

- A. refraction
- B. reflection
- C. diffraction
- D. polarization
- E. disaggregation

32. The unit of quantity of electricity is called \_\_\_\_\_

- A. amperes
- B. the volt
- C. the coulomb
- D. the ammeter

33. The stream of water ( $\text{H}_2\text{O}$ ) up the plant is known as \_\_\_\_\_

- A. transpiration stream
- B. translocation stream
- C. xylem stream
- D. osmosis stream

34. Transport of sugars and amino acids in plants is called its \_\_\_\_\_

- A. Transportation
- B. transpiration
- C. trans motion
- D. translocation

35. The more the hydrogen peroxide ( $\text{H}_2\text{O}_2$ ) in urine, the \_\_\_\_\_

- A. lighter the colour of the strip
- B. the acidic the urine be
- C. darker the colour of the strip
- D. more healthier a person be

36. Hydrogen peroxide ( $\text{H}_2\text{O}_2$ ) \_\_\_\_\_

- A. helps line up cell proteins
- B. is poisonous to tissues
- C. is often needed as a catalyst
- D. aids in oxidation of glucose

37. The nature of rennin is slightly \_\_\_\_\_

- A. Acidic
- B. alkaline
- C. water based
- D. mineral based

38. If  $\sin(x + 30)^\circ = \cos 40^\circ$ , find x.

- A.  $10^\circ$
- B.  $20^\circ$
- C.  $59^\circ$
- D.  $65^\circ$
- E.  $80^\circ$

39. Find the 9th term of the arithmetic, progression, 18, 12, 6, 0, 6 .....

- A. -54
- B. -30
- C. 30
- D. 42
- E. 54

40. Solve the equation:  $\frac{4}{a} + \frac{1}{5a} = 3$

- A.  $2\frac{1}{2}$
- B.  $\frac{12}{5}$
- C.  $\frac{11}{3}$
- D.  $\frac{14}{15}$
- E.  $\frac{24}{5}$

## 2018/2019 POST UTME SCREENING ANSWERS

1. B 2. D 3. C 4. C 5. B 6. D 7. A 8. A 9. C  
10. B 11. B 12. B 13. D 14. A 15. C 16. C  
17. A 18. B 19. C 20. B 21. D 22. B 23. D  
24. A 25. C 26. B 27. C 28. C 29. B 30. A  
31. D 32. C 33. A 34. D 35. C 36. B 37. A  
38. B 39. B 40. B

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