

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
BIOLOGY

1. _____ is an end product of digestion of fat. (A) Glucose (B) Fatty acid (C) Amino acid (D) Fructose (E) Galactose# B
2. Asexual reproduction in Hydra sp. is commonly by ____ (A) Binary fission b. Fragmentation c. Budding d. Separation (E) Regeneration C
3. Benedict's solution is used to test for ____ (A) Carbohydrate (B) Lipid (C) Protein (D) Vitamins (E) Minerals C
4. Pepsin is an enzyme that digests ____ (A). Starch (B). Sugar (C). Lipid (D). Fat (E). Protein E
5. The breakdown of large organic molecules into smaller simpler soluble molecules is called — (A) Excretion (B) Digestion (C) Absorption (D) Reproduction (E) Ingestion# B
6. The enzyme that curdles milk is _____ (A). Pepsin (B). Ptyalin (C). Renin (D). Amylase (E). Trypsin C
7. Which is the enzyme that begins digestion of starch in the mouth? (A) Ptyalin (B) Maltase (C) Amylase (D) Sucrase (E) Lactase A
8. A group of interacting populations in a particular habitat can be described as ____ (A) biome (B) biosphere (C) community (D) population ecosystem (E) environment. C
9. A habitat can be defined as ____ (A) a group of animals and plants living within a common boundary. (B) a place in which plants and animals live. (C) a community living together in the same place. (D) different areas, with a common animal and plant population. (E) None of the above. B
10. A symbiotic relationship in which one organism is completely dependent on another organism is called ____ (A) Parasitism (B) Commensalisms (C) Mutualism (D) Saprophytism (E) Competition A
11. An association between two organisms where both members benefit is known as ____ (A) symbiosis. (B) commensalism. (C) ammensalism. (D) mutualism. (E) saprophytism. D
12. An instrument used in measuring the speed of wind is (A) a barometer (B) a wind gauge (C) a wind vane (D) an anemometer (E) a hydrometer. D
13. At times hyenas feed on remains of animals killed by other animals. At other times, hyenas themselves kill animals for food. Therefore hyenas may best be described as — (A) scavengers and herbivores (B) scavengers and parasites (C) scavengers and predators (D) herbivores and predators e. herbivores and parasites C
14. Autecology is defined as the study of interrelationship of (A) many species of organisms and their environment (B) same species of organisms and their environment. (C) organisms in the atmosphere. (D) organisms under the earth's surface. (E) None of the above. # B
15. Autotrophs are also described as — (A) Consumers (B) Decomposers (C) Carnivores (D) Producers (E) Herbivores D
16. If three 30cm lengths of glass tubing are tightly packed with clay, sand and loamy soils respectively and then stood in a beaker of water for one week the level of water will be (A) Lowest in the tube with clay (B) The same in all the tubes (C) Lowest in the tube with loamy soil (D) Highest in the tube with sandy soil (E) Lowest in the tube with sandy soil E
17. In a community bacteria and fungi are referred to as — (A) producers (B) consumers (C) scavengers (D) tertiary consumers (E) decomposers E

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
BIOLOGY

18. Puddles, Ponds, Rivers, Seas and Oceans are grouped together as — (A) Ecosystem (B) Biosphere (C) Aquatic habitat (D) Terrestrial habitat (E) Marine environment# C
19. The feeding pattern in an ecosystem is called..... (A) Pyramid of energy (B) Food web (C) Food chain (D) Pyramid of member (E) Ecology B
20. The orderly changes that occur slowly and naturally in plant and animal communities in a given area over a period of time until a stable community is established is called — (A) Transformational change (B) ecological succession. (C) survival of the fittest. (D) weather change (E) environmental change. B
21. The sign + is used to indicate an association where an organism gains, while 0 is used where an organism is unaffected. An association indicated as +0 is known as — (A) predation (B) commensalism (C) parasitism (D) competition (E) ammensalism# B
22. The sum total of all the roles an organism plays in a habitat is referred to as (A) ecology. (B) ecosystem. (C) habit. (D) habitat. (E) niche E
23. Which of the following factors does not control population growth? (A) Food shortage (B) Emigration (C) Predation (D) Abundance of food (E) Natural disaster D
24. Which of the following statements best describe an ecosystem? (A) A place where living organisms can live successfully. (B) The interactions between living organism in a habitat and the non-living part of the environment. (C) A biological association between a plant and an animal. (D) A system of grouping organisms in a habitat. (E) None of the above. B
25. Which of these represents a correct food chain in nature? (A) Crustacea → diatom → fish → man (B) Diatom → crustacea → fish → man (C) Fish → crustacea → man → diatom (D) Diatom → fish → crustacea → man (E) None of the above. B
26. _____ is involved in the mechanism of expelling water from the protozoans during the process of _____ (A) Contractile vacuole, Osmoregulation (B) Contractile vacuole, Phagocytosis (C) Food vacuole, Ultrafiltration (D) Food vacuole, Pinocytosis (E) Cell membrane, Pinocytosis@ A
27. _____ is used for photosynthesis in *Euglena* sp. (A) Reservoir (B) Nucleus (C) Chloroplast (D) Paramylon granule (E) Pellicle# C
28. A heart with four chambers is found in _____ (A) Fishes (B) Insects (C) Snails (D) Rats (E) Worms D
29. Animal cell does not have a _____ (A) Membrane (B) Nucleolus (C) Food Vacuole (D) Cell wall (E) Golgi body# D
30. Beriberi is caused by deficiency of vitamin _____ (A) A (B) D (C) K (D) E (E) B E
31. Compound eyes are found in which of the animals below (A) Rat (B) Cow (C) Snail (D) Ant (E) Jelly fish D
32. Dental formula of man consist of (A) $i\ 2/2, c\ 2/2, pm\ 2/2, m\ 3/3$ (B) $i\ 1/1, c\ 2/2, pm\ 2/2, m\ 3/3$ (C) $i\ 2/2, c\ 1/1, pm\ 3/2, m\ 2/2$ (D) $i\ 2/2, c\ 1/1, pm\ 2/2, m\ 2/2$ (E) $i\ 2/2, c\ 1/1, pm\ 2/2, m\ 3/3$ E
33. During digestion of food, passage of chyme through the duodenum enables it to become a watery liquid called _____ (A) Digested food (B) Chymatic product (C) Chyle (D) Soluble food (E) Dissolved food C

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
BIOLOGY

34. Emulsification of fat and oils is caused by _____ (A) Lipase (B) Ptyalin (C) Trypsin (D) Maltase (E) Bile E
35. Every mammal has (A) One Kidney (B) Two pairs of Kidneys (C) One pair of Kidneys (D) Four Kidneys (E) None of the above C
36. Faeces is removed from the body in a process called (A) Digestion (B) Egestion (C) Elimination (D) Excretion (E) Evacuation B
37. Glomerulus is found in the _____ (A) Ovary (B) Testes (C) Brain (D) Kidney (E) Stomach# D
38. In the respiratory system of man, diffusion of gases takes place in (A) Trachea (B) Bronchi (C) Alveoli (D) Bronchioles (E) None of the above C
39. Incisors are used for (A) Tearing food (B) Cutting food (C) Grinding food (D) Shearing food (E) Crushing food B
40. Nematocysts are produced by special cells found in (A) Nematodes (B) Annelids (C) Platyhelminthes (D) Cnidarians (Coelenterates) (E) Arthropods# D
41. One of the following is not a function of the skin (A) Excretion (B) Protection (C) Homeostasis (D) Reproduction (E) Absorption of vitamin D D
42. Open circulatory system is found in _____ (A) Lizard (B) Toad (C) Fish (D) Insect (E) Chicken D
43. Ovary is to the female reproductive system as _____ is to the male reproductive system (A) Penis (B) Urethra (C) Testis (D) Cowper's gland (E) Prostate gland C
44. Possession of pinna is a characteristic feature of (A) Mammals (B) Reptiles (C) Fishes (D) Amphibians (E) All of the above A
45. Tadpoles respire with (A) Lungs (B) Nostril (C) Gills (D) Spiracles (E) Siphon C
46. The excretory organ in the earthworm is..... (A) Malphigian tubule (B) Stoma (C) Nephridium (D) Flame cells (E) Gills C
47. The nerves that connect the eyes to the brain are called — (A) Cranial nerves (B) Optical nerves (C) Sensory nerves (D) Olfactory nerves (E) Optic nerves. E
48. The nerves that connect the eyes to the brain are called — (A) Cranial nerves (B) Optical nerves (C) Sensory nerves (D) Olfactory nerves (E) Optic nerves. E
49. The parasympathetic nervous system is involved in (A) Dilation of pupil of the eye (B) Control the activities of smooth muscles (C) Dilatation of the skin (D) Controls thinking in mammals (E) Increased metabolism# B
50. The part of the alimentary system of a bird where grinding of food occurs is (A) Crop (B) Stomach (C) Cloaca (D) Rectum (E) Gizzard E
51. The part of the ear that contains receptors that convert the fluid motion into action potential is called — (A) Auditory nerve (B) Ossicles (C) Semicircular canals (D) Cochlea (E) Oval window D
52. The thoracic region of the vertebral column is made up of _____ vertebrae. (A) 5 (B) 7 (C) 4 (D) 12 (E) 10 D
53. Which of the animal below is poikilothermic? (A) Toad (B) Chicken (C) Bat (D) Lion (E) Dove A

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
BIOLOGY

54. Which of the structures below is found in reptiles and birds (A) Scales (B) Legs (C) Beaks (D) Claws (E) All of the above A
55. Which of these animals is photosynthetic? (A) *Paramecium* sp. (B) *Amoeba* sp. (C) *Euglena* sp. (D) *Hydra* sp. (E) None of the above C
56. Which of these organs regulate the amount of sugar in the blood? (A) Liver (B) Kidney (C) Spleen (D) Lung (E) Pancreas# E
57. The basis for growth and asexual reproduction is (A) meiosis (B) cytokinesis (C) mitosis (D) Cytogenesis (E) Cell elongation. C
58. The process which ensures that the chromosome number for each species of organism remain constant from generation to generation is called (A) fission (B) fusion (C) meiosis (D) mitosis (E) oogenesis C
59. Which of the following is a major factor in variation among organisms? (A) Inbreeding (B) Backcrossing (C) Test crossing (D) Sexual reproduction (E) Gene dominance D
60. _____ is an example of an invertebrate (A) Millipede (B) Fish (C) Toad (D) Snake (E) Skin# A
61. _____ is the odd one in the list below (A) Mosquito (B) Bee (C) Moth (D) Tick (E) Beetle D
62. _____ are flatworms (A) Platyhelminthes (B) Annelida (C) Nematoda (D) Diplopoda (E) Chilopoda# A
63. _____ is an example of a unicellular organism (A) *Amoeba* sp. (B) *Hydra* sp. (C) *Ascaris* sp. (D) *Taenia* sp. (E) *Obelia* sp. A
64. _____ level is the highest level of organization in animals. (A) System (B) Tissue (C) Organ (D) Cellular (E) Protoplasmic A
65. Crocodiles are _____ (A) Fishes (B) Amphibians (C) Mammals (D) Birds (E) None of the above# E
66. The mutation theory of organic evolution was propounded by (A) Gregor Mendel (B) Hugo de Vrics (C) Jean Lamarck (D) Charles Darwin (E) Robert Hookes. D
67. The theory of natural selection was developed by (A) Lamarck and Darwin (B) Darwin and Wallace (C) Wallace and Mendel (D) Mendel and Lamarck (E) Hooke and Darwin. B
68. Which is the odd animal in the list below? (A) Lizards (B) Snakes (C) Turtles (D) Tortoise (E) Toad E
69. Which of the following sources is not an evidence of evolution? (A) Fossil records B. Comparative anatomy C. Comparative embryology (D) Human behavior (E) None of the above D
70. _____ is an endoparasite (A) Earthworm (B) Tapeworm (C) Mosquito (D) Housefly (E) Tsetse fly B
71. The causative agent of bird flu is a (A) Virus (B) Bacteria (C) Fungus (D) Protozoan (E) Rickettsia A
72. In lower plants like mosses, the structure which performs the functions of roots of higher plants is called (A) root hairs (B) rootlets (C) hyphae (D) rhizoids (E) thalli. D

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
BIOLOGY

73. One common feature of fungi, algae, mosses and ferns is that they are (A) photosynthetic (B) show alternation of generation (C) can survive harsh weather conditions (D) have no seeds (E) conjugate D
74. The following are major groups of the plant kingdom EXCEPT (A) Bryophyta (B) Chlorophyta (C) Pteridophyta (D) Spermatophyta (E) Thallophyta B
75. _____ is a form of sexual reproduction (A) Grafting (B) Budding (C) Fission (D) Conjugation (E) Regeneration D
76. Sexual reproduction in Spirogyra is called (A) Fertilization (B) Symbiosis (C) Conjugation (D) Reproduction (E) Mutualism C
77. The carrier of the hereditary characters in plants is the (A) Cell (B) nucleus (C) chromosome (D) chloroplast (E) gene E
78. All are necessary for photosynthesis except _____ (A) Water (B) Chlorophyll (C) Sunlight (D) Carbon dioxide (E) Oxygen E
79. Growing yam tendrils climb for support. This growth response is (A) haptotropism (B) geotropism (C) phototropism (D) hydrotropism (E) chemotropism. A
80. Which is the correct order in an evolutionary sequence for the following plant groups? (A) Bacteria → ferns → algae → mosses → seed plants. (B) Bacteria → ferns → mosses → algae → seed plants. (C) Bacteria → algae → mosses → ferns → seed plants. (D) Bacteria → mosses → algae → ferns → seed plants. (E) Seed plants → ferns → mosses → algae → bacteria. C
81. ----- is not part of the whorls of a flower.(A)calyx (B) corolla (C) androecium (D) Antheridium (E)Gynoecium# D
82. A dry fruit which can break into several parts each containing one seed is a (A) caryopsis (B) aggregate fruit (C) legume (D) follicle (E) schizocarp E
83. A dry indehiscent, winged fruit formed from one carpel is known as a (A) Schizocarp (B) Caryopsis (C) Samara (D) nut (E) Follicle C
84. A true fruit is formed from (A) fertilized ovary and other floral parts (B) a fertilized ovary (C) a fertilized ovary and calyx (D) a fertilized and fleshy receptacle (E) an unfertilized ovary and other floral parts B
85. Irish potato is a (A) bulb (B) tap root (C) rhizome (D) root tuber (E) stem tuber D
86. One major difference between an Angiosperm and a Gymnosperm is that seeds in Gymnosperms are borne in (A) Cones (B) fruits (C) flowers (D) ovary (E) ovule A
87. Reserved food material in the seed is stored in the (A) epicarp (B) endocarp (C) endosperm (D) mesocarp (E) all parts C
88. What type of fruit is a mango fruit? (A) Berry (B) Hesperidium (C) Drupe (D) Nut (E) Mango fruit C
89. Which of the following species exhibit an aerial root? (A) Ficus (B) Centrosema (C) Antigonon (D) Lantana (E) Dahlia A
90. Which of these plants has an emerginate apex? (A) Bauhinia (B) Pistia (C) Ixora (D) Musa (E) Terminalia A
91. Which plant stores food in its roots? (A) Cassava (B) cocoyam (C) Irish potato (D) onion (E) yam. A

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
BIOLOGY

92. An example of Vascular tissues is ----- (A) Trichome (B) Xylem (C) Stomata (D) Epidermis (E) Parenchyma B
93. The living part of phloem tissue is (A) sieve plate (B) companion cell (C) sieve element (D) cytoplasm# B
94. Which of the following tissues are made up of dead cells (A) meristems (B) xylem vessels (C) cambium (D) mesophyll (E) palisade B
95. A plant vacuole contains (A) dissolved chemicals, sugars, salts, pigments and crystals (B) waste products of metabolism, DNA, RNA and crystals (C) pigments, crystals, DNA and waste products of metabolism (D) RNA, DNA, sugars and salts A
96. Excessive loss of water in plants is known as (A) Osmosis (B) Osmoregulation (C) Transpiration (D) Excretion C
97. Starch granules in plants is equivalent to _____ granules in animals (A) Food (B) Chromatin (C) Lysosome (D) Mitochondria (E) Glycogen E
98. Which of the following is a plant excretory product? (A) Oil (B) Cytokinin (C) Resin (D) amino acids (E) gibberellins. C
99. A plant which grows on another without causing harm to the host plant is called — (A) a parasite (B) a saprophyte (C) an epiphyte (D) a predator (E) a prey. # C
100. Plants which can survive in places where water supply is limited are (A) bryophytes (B) mesophytes (C) xerophytes (D) hydrophytes (E) pteridophytes. C

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
CHEMISTRY

1. 200 cm³ of air was passed over heated copper in a syringe several times to produce copper (II) oxide. When cooled, the final volume of air recorded was 158 cm³. Estimate the percentage of oxygen in the air. (A) 31% (B) 27% (C) 21% (D) 19% C
2. 30cm³ of oxygen at 10 atmosphere pressures is placed in a 20dm³ container. Calculate the new pressure if temperature is kept constant. (A) 6.7 atm (B) 15.0 atm (C) 60.0 (D) 66.0 B
3. Bond dissociation energy of 500 KJ mol⁻¹ may be assigned to (A) ionic bonding (B) covalent bonding (C) hydrogen bonding (D) metallic bonding (E) van-der-waals bonding. A
4. A mixture of iron and sulphur can be separated by dissolving the mixture in __ (A) steam (B) dilute hydrochloric acid (C) dilute sodium hydroxide (D) benzene B
5. A mixture of sand, ammonium chloride and sodium chloride is best separated by __ (A) sublimation followed by addition of water and filtration (B) sublimation followed by addition of water and evaporation (C) addition of water followed by filtration and sublimation (D) addition of water followed by crystallization and sublimation A
6. A pure solid usually melts __ (A) over a wide range of temperature (B) over a narrow range of temperature (C) at a lower temperature than the impure one (D) at the same temperature as the impure one B
7. A small quantity of solid ammonium chloride was heated gently in a test tube; the solid gradually disappeared to produce a mixture of two gases. Later a white cloudy deposit was observed on the cooler part of the test tube. The ammonium chloride is said to have undergone __ (A) distillation (B) sublimation (C) precipitation (D) evaporation B
8. CH₄ has this geometry: (A) trigonal (B) planar (C) tetrahedral (D) octahedral (E) linear. C
9. Chlorine, consisting of two isotopes of mass numbers 35 and 37, has an atomic mass of 35.5. The relative abundance of the isotope of mass number 37 is __ (A) 20 (B) 25 (C) 50 (D) 75 B
10. Elements P, Q, R, S, have 6, 11, 15 and 17 electrons respectively, therefore (A) P will form an electrovalent bond with R (B) Q will form a covalent bond with S (C) R will form an electrovalent bond with S (D) Q will form an electrovalent bond with S D
11. In the oil drop experiment, Millikan determined the (A) charge to mass ratio of the electron (B) mass of the electron (C) charge of the electron (D) mass of the proton C
12. One of these atomic shells is the most stable (A) M (B) N (C) K (D) L (E) O C
13. Sieving is a technique used to separate mixtures containing 20% oxygen by volume. Which of the reactants was in excess? (A) Carbon (II) oxide (B) Oxygen (C) Carbon (IV) oxide (D) Nitrogen A
14. The abnormally high boiling point of water is primarily due to (A) ionic bonding (B) covalent bonding (C) dative bonding (D) coordinate covalent bonding (E) hydrogen bonding. E
15. The energy required to remove an electron from the isolated gaseous atom is known as (A) electron affinity (B) bond energy (C) ionisation energy (D) electronegativity (E) electrovalency. C
16. The group that oxygen belongs to is collectively called (A) allotropes (B) halogens (C) chalcogens (D) alkenes (E) ozonides. C

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
CHEMISTRY

17. The ideal gas equation is ____ (A) $P=nRT$ (B) $PR =nVT$ (C) $PV =gRT$ (D) $V=kT$ (E) $PV = K V$ A
18. The number of atoms in one mole of a substance is equal to (A) the atomic number (B) the Avogadro's number (C) number of neutrons (D) number of electrons (E) gas constant B
19. The number of electrons in the outermost shell of the atom represents its (A) period (B) number of shells (C) group (D) atomic number (E) electronegativity. C
20. The number of protons or electrons of an atom represents its (A) electronegativity (B) period (C) number of shells (D) group (E) atomic number E
21. The partial pressure of oxygen in a sample of air is 500 mmHg. If the total Pr pressure 780 mmHg, what is the mole fraction of the oxygen? (A) 0.64 [B (B) 5.73 (C) 1.56 (D) 0.70 (E) 0.54 A
22. The periodic classification of the elements is an arrangement of the elements in order of their (A) atomic weights (B) isotopic weights (C) molecular weights (D) atomic numbers D
23. The process of changing one element into another is called (A) radioisotope (B) radioactivity (C) dating (D) transmutation (E) nuclear reaction. D
24. The shapes of CO_2 , H_2O and CH_4 respectively are (A) bent, linear and tetrahedral (B) bent, tetrahedral and linear (C) tetrahedral, linear and bent (D) linear, bent and tetrahedral D
25. This compound exhibits ionic bonding (A) H_2O (B) H_2 (C) KCl (D) NH_3 (E) HF . C
26. This type of bonding involves overlapping of orbitals during which electrons are shared (A) hydrogen bonding (B) covalent bonding (C) ionic bonding (D) metallic bonding (E) van-der-waals bonding. B
27. Which one of the following changes is physical? (A) Adding iron filings to aerated water (B) Adding sodium metal to water (C) Cooling a solution of iron(II) sulphate to obtain the hydrated salt (D) Cooling water to obtain ice D
28. A side effect of soft water is that (A) it gives offensive taste (B) excess calcium is precipitated (C) it encourages the growth of bacteria (D) it attacks lead contained in pipes D
29. Ammonia is very soluble in water because it is a /an molecule (A) non-polar (B) polar (C) reactive (D) basic (E) acidic B
30. Citrus fruits such as lemon and grape taste sour because they contain (A) ascorbic acid and citric acid (B) citric acid and ascetic acid (C) citric acid and dilute HCl (D) citric acid and salicyclic acid (E) Sulphuric acid A
31. Soap lather is an example of a colloid in which a (A) liquid is dispersed in gas (B) solid is dispersed in liquid (C) gas is dispersed in liquid (D) liquid is dispersed in liquid C
32. The air around a petroleum refinery is most likely to contain.(A) CO_2 , SO_3 and N_2O (B) CO_2 , CO and N_2O (C) SO_2 , CO and NO_2 (D) PH_3 , H_2O and CO_2 C
33. The difference between colloids and suspensions is brought out clearly by the fact that while colloids (A) do not scatter light, suspensions do (B) can be separated by filtration, suspensions cannot be so separated (C) can be separated by a membrane, suspensions cannot (D) do not settle out on standing, suspensions do D
34. The following substances are non-electrolytes except (A) chloroform (B) sugar cane (C) acetic acid (D) $NaCl$ (E) C and D. E

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
CHEMISTRY

35. The hydrolysis of NH_4Cl salt will give (A) acidic solution (B) neutral solution (C) basic solution (D) hot solution (E) all of the above A
36. The pollutants that are likely to be present in an industrial environment are (A) H_2S , SO_2 and oxides of nitrogen (B) NH_3 , HCl and CO (C) CO_2 , NH_3 , and H_2S (D) dust, NO and Cl_2 A
37. What is the basicity of tetraoxosulphate (VI) acid? (A) 2 (B) 1 (C) 3 (D) 4 (E) 0 A
38. Which of the following gases is the most dangerous pollutant? (A) Hydrogen sulphide (B) Carbon (IV) oxide (C) Sulphur (IV) oxide (D) Carbon (II) oxide D
39. Which of the following ions is a pollutant in drinking water even in trace amount? (A) Ca^{2+} (B) Hg^{2+} (C) Mg^{2+} (D) Fe^{2+} B
40. Which of the following is an example of a double salt (A) NH_4Cl (B) alum (C) NaCO_3 (D) AlCl_3 (E) NaCl B
41. 0.16g of methane when burnt increases the temperature of 100g of water by 40°C , what is the heat of combustion of methane if the heat capacity of water is $4.2 \text{ Jg}^{-1}\text{C}^{-1}$? ($\text{CH}_4=16$). (A) $1,160\text{kJmol}^{-1}$ (B) $1,180\text{kJmol}^{-1}$ (C) $1,560\text{kJmol}^{-1}$ (D) $1,600\text{kJmol}^{-1}$ (E) $1,680\text{kJmol}^{-1}$ E
42. A charged car battery has ___ energy that can be converted into another energy called ___ energy (A) Chemical, electrical (B) mechanical, chemical (C) heat, mechanical (D) light, electrical (E) light, heat A
43. Copper oxide is heated with charcoal to produce carbon monoxide and copper. The reaction is an example of (A) both oxidation and reduction (B) neither oxidation and reduction (C) oxidation only (D) reduction only (E) neutralization A
44. For each oxygen atom in hydrogen peroxide which acts as an oxidant, there is an oxygen atom which acts as a /an (A) Oxidant (B) reductant (C) oxidizing agent (D) catalyst (E) inhibitor B
45. Given the change of phase: $\text{CO}_2(\text{g})$ changes to $\text{CO}_2(\text{s})$, the entropy of the system (A) decreases (B) increases (C) remains the same A
46. In which of the following is the entropy change positive? (A) Reaction between an acid and a base. (B) Addition of concentrated acid to water. (C) Dissolution of sodium metal in water. (D) Thermal dissociation of ammonium chloride. C
47. One of these elements is the best reducing agent. (A) Pb (B) Rb (C) Al (D) In (E) N B
48. The name of the gas driven off at the negative electrode during the electrolysis of brine is ___ (A) hydrogen (B) chlorine (C) oxygen (D) sodium (E) hydrogen chloride B
49. The oxidation state of P in $\text{H}_2\text{P}_2\text{O}_7^{2-}$ is ___ (A) -3 (B) +3 (C) +1 (D) +5 (E) -2 D
50. The oxidation state of S in $\text{Ca}(\text{HSO}_3)_2$ is ___ (A) +2 (B) -2 (C) +4 (D) -4 (E) +6. C
51. The oxidizing agent in the reaction, $3\text{Br}_2 + 6\text{OH}^- = \text{BrO}_3^- + 5\text{Br}^- + 3\text{H}_2\text{O}$ is ___ (A) Br_2 (B) OH^- (C) BrO_3^- (D) e^- (E) H_2O . A
52. When heat is absorbed during a chemical reaction, the reaction is said to be ___ (A) thermodynamic (B) exothermal (C) isothermal (D) endothermic (E) thermostatic D

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
CHEMISTRY

53. Given the reaction at equilibrium: $2\text{CO}(\text{g}) + \text{O}_2(\text{g}) \leftrightarrow 2\text{CO}_2(\text{g})$ When the reaction is subjected to stress, a change will occur in the concentration of (A) reactants, only (B) products, only (C) both reactants and products (D) neither reactants nor products C
54. Given the reaction at equilibrium: $\text{N}_2(\text{g}) + \text{O}_2(\text{g}) \leftrightarrow 2\text{NO}(\text{g})$ as the concentration of $\text{N}_2(\text{g})$ increases, the concentration of $\text{O}_2(\text{g})$ will (A) decrease (B) increase (C) remains the same (D) vanishes (E) pours away A
55. If a reaction is exothermic and there is a great disorder, it means that (A) The reaction is in a state of equilibrium (B) There will be a large increase in free energy (C) There will be a large decrease in free energy (D) The reaction is static. B
56. In the chemical reaction of $\text{A} + \text{B} = \text{C} + \text{D}$, more of D is formed (A) if the concentration of A is reduced (B) if the concentration of B is reduced (C) if the concentration of C is reduced (D) if the concentration of C is increased (E) if it is continuously removed from the reaction mixture E
57. In what way is equilibrium constant for the forward reaction related to that of the reverse reaction? (A) The addition of the two is expected to be one. (B) The product of two is expected to be one. (C) The two equilibrium constants are identical. (D) The product of the two is always greater than one. C
58. In which reaction will the point of equilibrium shift to the left when the pressure on the system is increased? (A) $\text{C}(\text{s}) + \text{O}_2(\text{g}) \leftrightarrow \text{CO}_2(\text{g})$ (B) $\text{CaCO}_3(\text{s}) \leftrightarrow \text{CaO}(\text{s}) + \text{CO}_2(\text{g})$ (C) $2\text{Mg}(\text{s}) + \text{O}_2(\text{g}) \leftrightarrow 2\text{MgO}(\text{s})$ (D) $2\text{H}_2(\text{g}) + \text{O}_2(\text{g}) \leftrightarrow 2\text{H}_2\text{O}(\text{g})$ B
59. The furring of kettles is caused by the presence in water of ___ (A) calcium trioxocarbonate (IV) (B) calcium tetraoxosulphate (VI) (C) calcium hydroxide (D) calcium hydrogentrioxocarbonate (IV) D
60. Which is a property of a reaction that has reached equilibrium? (A) The amount of products is greater than the amount of reactants. (B) The amount of products is equal to the amount of reactants. (C) The rate of the forward reaction is greater than the rate of the reverse reaction. (D) The rate of the forward reaction is equal to the rate of the reverse reaction. D
61. Which of the following combination of conditions many increase the rate of a chemical reaction. (A) Decrease in temperature, increase in concentration of the reactant (B) Increase in temperature, addition of a catalyst, decrease in the surface area of the reactant (C) Increase in temperature, increase in concentration, addition of a catalyst and increase in the surface area of the reactant (D) Decrease in temperature, concentration and surface area of the reactants (E) Addition of catalyst and in the absence of light. C
62. "Quicklime" has the formula ___ (A) $\text{Ca}(\text{OH})_2$ (B) CaO (C) CaCO_3 (D) $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ (E) CaCl_2 B
63. A Transition metal is different from a non-transition metal because (A) it has an octet configuration (B) it is very stable (C) it is coloured (D) it has incomplete outer shell d-electrons (E) it has no electron in the d-orbital. D
64. Chlorine is produced commercially by (A) electrolysis of dilute HCl (B) electrolysis of brine (C) neutralization of HCl (D) heating potassium trioxochlorate (V) (E) action of dilute mineral acids on bleaching powder. B

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
CHEMISTRY

65. Chlorine, bromine and iodine resemble one another since they ___ (A) dissolve in alkalis (B) react violently with H₂ without heating (C) displace each other from solutions of their salts (D) are gases (E) are liquids. A
66. Liquid oxygen may be produced by condensation of air using this coolant (A) liquid phosphorus (B) liquid gas (C) liquid paraffin (D) liquid nitrogen (E) butane. D
67. One of these is another form of oxygen (A) hydroxide (B) ozone (C) peroxide (D) sulphoxide (E) water. B
68. One of these metals is not an alkali metal (A) K (B) Cs (C) Sr (D) Rb (E) Fr C
69. One of these reactions represents the laboratory preparation of hydrogen. (A) $C(s) + H_2O(l) \rightarrow CO(g) + H_2(g)$ (B) $2 Na(s) + 2H_2O(l) \rightarrow 2 NaOH(aq) + H_2(g)$ (C) $Cu(s) + H_2O(l) \rightarrow CuO(s) + H_2(g)$ (D) $2Al(s) + 3H_2O(l) \rightarrow Al_2O_3(s) + 3H_2(g)$ (E) $Zn(s) + 2HCl(aq) \rightarrow ZnCl_2(aq) + H_2(g)$ E
70. The formation of ozone by reaction of O₂ with atomic oxygen in UV light occurs in (A) upper atmosphere (B) inner atmosphere (C) stratosphere (D) hemisphere (E) none of these. A
71. The halogen which is chiefly produced commercially from sea water is ___ (A) Fluorine (B) chlorine (C) Bromine (D) iodine (E) Astatine. B
72. The most stable allotropic form of sulphur at normal conditions is ___ (A) monoclinic sulphur (B) rhombic sulphur (C) amorphous sulphur (D) plastic sulphur (E) ordinary sulphur B
73. The products obtained when the following chemical reaction is completed and balanced are... $HNO_3 + Ca(OH)_2 \rightarrow$ _____ (A) $CaNO_3 + H_2O$ (B) $Ca(NO_3)_2 + 2 H_2O$ (C) $CaO + 2 NO_2 + 3H_2O$ (D) $Ca + 2 NO_3 + 2 H_2O$ B
74. What is the role of iron and Aluminium oxide in ammonia production? (A) dehydrating agent (B) catalytic agent (C) oxidizing agent (D) bonding agent (E) preservative agent B
75. When carbon IV oxide is bubbled through lime water, the solution becomes milky due formation of (A) $Ca(HCO_3)_2$ (B) $CaCO_3$ (C) $Ca(NO_3)_2$ (D) $CaCl_2$ (E) $CaSO_4$ B
76. Which of the following gases dissolves in water vapour to produce acid rain during rainfall? (A) Oxygen (B) Carbon (II) oxide (C) Nitrogen (D) Sulphur (IV) oxide D
77. Which of the following is not allotrope of carbon? (A) diamond (B) graphite (C) buckminsterfullerene (D) all of the above (E) none of the above E
78. Which oxide is amphiprotic (amphoteric)? (A) MgO (B) NaO (C) CaO (D) ZnO (E) BeO D
79. Why will it always be more difficult to extract potassium ions from sea water than to extract magnesium ions? This is because (A) most potassium compounds are less soluble in water (B) most potassium compounds are quite soluble in water (C) presence of other alkali metal ions has great influence on it (D) magnesium ion is an alkaline earth metal ion. (E) None of the above. B
80. _____ can be used to test for reducing sugars: (A) Iodine solution (B) bromine water (C) Fehling's solution (D) de-ionized water C

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
CHEMISTRY

81. $2\text{CH}_3\text{COOH} + \text{Zn} \rightarrow ?$ The product of this reaction is: (A) $(\text{CH}_3\text{COO})_2\text{Zn} + \text{Zn}$ (B) $\text{CH}_3\text{COOCH}_3 + \text{Zn}$ (C) $(\text{CH}_3\text{COO})_2\text{Zn} + \text{H}_2$ (D) $\text{CH}_3\text{COOH} + \text{CH}_4$ C
82. A ketone reacts with hydroxylamine to give (A) a hydrazone (B) an alkanonitrile (C) a nitroso compound (D) an oxime D
83. Alkanoic acids are weak acids and ionises in solution to give: (A) $\text{R}^+ + \text{COOH}$ (B) $\text{RCOO}^- + \text{H}^+$ (C) $\text{RCOO}^+ + \text{H}^-$ (D) $\text{RCO}^+ + \text{OH}^-$ B
84. An excess of ethanol heated with concentrated H_2SO_4 at a temperature of 180°C is dehydrated to give mostly: (A) ethane (B) ethene (C) ethanol (D) ethoxyethane B
85. Butene can be distinguished from benzene by reaction with: (A) Hydrochloric acid (B) Bromine water (C) Potassium sulphate (D) Sodium hydroxide B
86. Detergent is more efficient than soap in cleansing clothes and dishes because of the following reasons except that: (A) the corresponding Ca and Mg compound formed is soluble in H_2O (B) detergents are not affected by hardness of water (C) it cleans better than soap (D) it is less expensive D
87. In the manufacture of soap industrially, brine is used to _____ the acid salt. (A) oxidise (B) reduce (C) bleach (D) precipitate D
88. Methane gas can be made from carbon (II) oxide gas according to the equation $2\text{CO}(\text{g}) + 2\text{H}_2(\text{g}) \rightarrow \text{CH}_4(\text{g}) + \text{CO}_2(\text{g})$. Calculate the mass of CO required to produce 8.75×10^{25} molecules of CH_4 ? {At masses: C=12.011, H= 1.008, O = 15.999, Avogadro's no: 6.022×10^{23} molecules /mole.} (A) 8140g (B) 4070g (C) 1600g (D) 32.00g (E) 20.35g A
89. Potassium ethanoate is formed when: (A) Methanoic acid reacts with KOH (B) Ethanoic acid reacts with KOH (C) Methanol reacts with KCO_3 (D) Ethanol reacts with CH_3COOH B
90. Saponification is defined as: (A) Acidic hydrolysis of fat or oil (B) Alkali hydrolysis of fat or oil (C) Condensation of two monomer units (D) Mixture of glacial ethanoic acid and excess of simple alkanol B
91. Soaps and detergents have the same basic characteristics except that the carboxyl group of the fatty acid in detergent is replaced by: (A) alcohol (B) sulphate or a sulphonate group (C) ester (D) acids B
92. The relatively high boiling point of alkanols is due to: (A) aliphatic character (B) ionic bonding (C) hydrogen bonding (D) covalent bonding C
93. Two important sources of detergent are : (A) fat/oils and hydrocarbons (B) coal and cement (C) pulp and wood (D) water and gas A
94. What is the process associated with conversion of vegetable oil to soap? (A) Esterification (B) Saponification (C) hydrolysis (D) Acidification B
95. When ethanal vapour is passed over manganese (II) ethanoate (manganese acetate) catalyst in the presence of air, the product is: (A) ethanoate (B) ethanol (C) methanol (D) ethanoic acid D
96. When KOH is used instead of NaOH in the production of soap, it has the following advantages except it gives: (A) softer soap (B) harder soap (C) soap with lower melting point (D) more soluble soap B

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
CHEMISTRY

97. When palm wine is left exposed to air for a few days, it goes sour. The bacteria in the air oxidises. _____ in palm wine to _____ (A) ethanol, ethanoic acid (B) ethanoic acid, ethanol (C) ester, ethanoic acid (D) ether, ethanol A
98. Which of the following is not true about benzoic acid? (A) It is aromatic in nature (B) It can be manufactured from methylbenzene (C) It has molecular formula C_6H_6COOH (D) It sublimes readily C
99. Which of the following reactions is correct? (A) $C_6H_5COOH + CaO \rightarrow C_6H_5Ca + HCO_3$ (B) $C_6H_5COOH + CaO \rightarrow C_6H_6 + CaCO_3$ (C) $C_6H_5COOH + PCl_5 \rightarrow C_6H_5Cl + H_2PO_4$ (D) $C_6H_5COOH + C_2H_5OH \rightarrow C_6H_6 + C_3H_8COOH$ B
100. Which of these is not a property of ethanedioic acid? (A) It is a stronger acid than ethanoic acid but weaker than inorganic acids (B) It is a reducing agent (C) It is an oxidising agent (D) It is soluble in cold water C

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
USE OF ENGLISH

Read the passages below and answer the questions that follow:

PASSAGE A

Every discernible observer could foresee the crisis which engulfed the Edo House last week. Only a few days before, reports were rife about the AC reaching out to some PDP legislators to cross-carpet. The intention being to gain a majority and then assume the Speakership with the least constraint. Zakawanu Garuba, the then Speaker, retorted with a fiat, threatening to declare vacant the seat of any defector. This in spite of the constitutional support for such action, as evidenced, for example, by the crisis that has torn the PDP apart in Edo State. The party has two factional chairmen in the state, even though one is more vociferous.

The desperate attempt by Garuba to cling to the Speaker's chair is condemnable. He was not being recalled from the legislature; and so, he still has his seat as a floor member. As speaker, he was only first among equals. The Speakership is not his birthright. With the defection of one PDP lawmaker to the AC, the legislature reconvened hours after the bloodbath and elected a protem Speaker, while impeaching and suspending Garuba and a few others. They are to be probed

(Adapted from The Guardian, Thursday, March 4, 2011, p.14)

1. Why did AC woo PDP members? B
 - A. they are few in number
 - B. they want speakership without stress
 - C. PDP members are faithful
 - D. The House is tough

2. The legislators impeached A
 - A. Garuba
 - B. PDP lawmakers
 - C. Garuba and some PDP lawmakers
 - D. Garuba and some lawmwkers

3. According to the passage, the constitution supports D
 - A. The speaker
 - B. Defecting
 - C. Edo State
 - D. Factional chairmen

4. The lawmakers reconvened B
 - A. After the defection of a PDP member
 - B. After the bloodbath
 - C. After suspending the Speaker
 - D. After electing a protem Speaker

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
USE OF ENGLISH

5. At the end, what happened to Garuba B
- A. He was vindicated
 - B. He was indicted
 - C. He was honoured
 - D. He was humiliated
6. To cross-carpet, as used in the passage, means to C
- A. change party
 - B. renew membership of a party
 - C. change one's carpet
 - D. buy new carpet
7. The crisis in the Edo State House of Assembly could be predicted by A
- A. The lawmakers
 - B. Edo State indigenes
 - C. The protem Speaker
 - D. All conscious observers

PASSAGE B

Nigeria has a troubled power sector which is however undergoing reforms that, hopefully, should usher in era of private sector dominance in terms of ownership and management of generation and distribution. In this transitory phase, it is crucial to lay a foundation for local sourcing of vital inputs and make it the norm for the industry. That is the only way to prevent a replication of the trend in the oil and gas sub-sector, where capital flight is as much as \$ 16 billion per annum, as revealed by the Petroleum Technology Development Fund.

The PHCN could legitimately insist on quality and standards in its procurement of equipment and materials, but what is playing out is an institutional orientation, evinced in several pursuits of the PHCN that are contemptuous of Nigeria's aspiration for local content development. In 1998, the defunct National Electric Power Authority defied a directive by the then Minister of Power and steel, Alhaji Bashir Dalhatu, to source its costable components from Nigerian foundries, some of which are of high standards. Actuated by a realization of idle capacity in the foundries and the need to conserve foreign exchange, the Minister applied appropriate pressure on the management of NEPA but found his efforts frustrated.

The acute shortage or inefficiency in the metering programme originated from the fact that the only local manufacturer then, the Federal Government-owned electricity Meter Company in Zaria, Kaduna State, established in 1976, but sold to Dantata Investments Limited in December 2002, is not performing.

(Adapted from *The Punch*, Wednesday, May 25, 2011. Pg. 18)

8. Why is there shortage of meter? C
- A. Non-performance of PHCN
 - B. Non-performance of NEPA
 - C. Non-performance of the Federal Government-owned electricity

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
USE OF ENGLISH

- Meter Company
D. Non-performance of Dantata Investment Ltd.
9. According to the passage, the solution to the problem in the power sector lies in A
A. Sourcing for materials locally
B. Getting costable components
C. Obeying the minister
D. Getting \$ 16 billion per annum
10. From the passage it is clear that B
A. There is money in the country
B. There is shortage of electricity meter
C. NEPA is better than PHCN
D. NEPA was formed in 1998
11. Which of these is not true of the power sector C
A. There is only one local manufacturer of electricity meter
B. The power sector is undergoing reforms
C. The problem of the power sector cannot be solved
D. there was procurement of equipment and materials
12. Which of these is undergoing reforms? D
A. NEPA
B. PHCN
C. Nigeria
D. The power sector
13. A suitable title for this passage is D
A. Nigeria and her problems
B. NEPA versus PHCN
C. Electricity meter
D. Problems in the power sector
- Choose the option that best completes the gap:**
14. University studentsbehave well. (A) can (B) should (C) may (D) must B
15. Gloria have finished the project two days ago. (A) must (B) may (C) can (D) supposed to A
16. You are Goodluck,? (A) are you? (B) aren't you? (C) are'nt you? (D) don't you? B
17. He not come now (A) needs (B) needed (C) need (D) will need C
18. Janetto know that we are all here. (A) suppose (B) supposes (C) is supposed (D) should suppose C
19. Let it be that there was no king in Ayegun. (A)know (B) knew (C) known (D) knows C
20. We shall see you soon,? (A) shall we? (B) shan't we? (C) shouldn't we (D) should we B

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
USE OF ENGLISH

21. Neither of the presidential candidates suitable. (A) are (B) is (C) is been (D) are been suitable. B
22. Ten miles ____ a great distance. (A) is (B) are (C) is been A
23. If I were the president, I ask for the money (A) will (B) should (C) would (D) can C
24. I will see you after I spoken with your supervisor. (A) might have (B) have (C) will have (D) would have B
25. "You- now see the director", the secretary told the visitors (A) can (B) may (C) should (D) would B
26. She isn't Gloria ? (A) is she? (B) isn't she? (C) aren't she? (D) doesn't she? A
27. We have a bus,? (A) didn't we? (B) haven't we? (C) doesn't we? (D) hasn't we? B
28. I knew David let us down. (A) may (B) will (C) might (D) can C
29. You me last week. (A) ought to see (B) ought to had seen (C) ought to have seen (D) had to have seen C
30. Twenty dollars ___ enough for my lunch. (A) are (B) is (c) are just B
31. The pests ____ our farm every year. (A) invade (B) invades (c) has invades A
32. If I were the Governor, I ask for the project (A) will (B) should (C) would (D) can C
33. When the Cleric today? (A) does/arrives (B) does/arrived (C) does/arrive (D) do arrive C
34. We shall see you soon,? (A) shall we? (B) shan't we? (C) shouldn't we (D) should we B
35. You missed the match,? (A) don't you? (B) didn't you? (C) hadn't you? (D) doesn't you? B
36. Walk the dog right now,? (A) walkn't you? (B) will you? (C) shall you? (D) would you? B
37. I am a student,? (A) I'm I? (B) aren't I? (C) isn't I? (D) wouldn't I? B
- Pick out the odd/wrong expression in each of the following :**
38. (A) I heard his supposed apology (B) I heard his unconvincing apology (C) I heard his suppose apology (D) I heard he was supposed apology D
39. (A) I suppose you know the way (B) I am supposed you know the way (C) I suppose he knows the way (D) They suppose he knows the way B
40. (A) I travel next week (B) I will travel next week (C) I suppose to travel next week (D) I should travel next week C
41. (A) Having discovered the error, he apologized (B) Having discovered the error, the apology was tendered (C) Having known the error, he apologised (D) Having found out the error, he tendered an apology B
42. (A) The job has been done (B) The job has been being done (C) They have done the job (D) They can have done the job D
43. (A) She must finish the project in two days (B) She must finish the project two days ago (C) She must have finished the project two days ago (D) She ought to have finished the project two days ago B
44. (A) If I went in there, I would beat the security officer (B) If I go in there, I would beat the security officer (C) If I go in there, I will beat the security officer (D) If I go in there, I can beat the security officer B

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
USE OF ENGLISH

Choose the option that most appropriately expresses the idea in the underlined expression.

45. My friend's parent's are magnanimous (A) rich and popular (B) sociable and lovable (C) kind and generous (D) wicked and stingy C
46. My friend has an overbearing attitude toward me (A) patient (B) impatient (C) opinionated and domineering (D) considerate and respectful C
47. There are a number of makeshift buildings in town (A) modern buildings (B) old fashion buildings (C) temporary buildings (D) permanent buildings C
48. Post UME is a hurdle to cross. (A) a necessary and simple exam to pass (B) an unnecessary and difficult exam to pass (C) an unnecessary but simple exam to pass (D) a necessary and challenging exam to pass D
49. His contribution to the project is invaluable (A) extremely useful (B) of no value (C) of little value (D) can not be valued A
50. That was a dawn-to-earth approach (A) poor (B) ordinary (C) practical (D) immodest B
51. Concerning my admission, I have to cross my fingers (A) wait and hope for the best (B) wait in frustration (C) wait confidently (D) take some risk A
52. My father is indifferent to my choice of University (A) supports (B) opposes (C) not decided (D) not concerned D
53. We need an ad hoc arrangement towards the project (A) intelligent (B) advanced (C) permanent (D) temporary D
54. The student's reply to the lecturer betrayed his rudeness (A) covered (B) showed (C) reduced (D) increased C
55. His conduct in the last elections was above board. (A) arrogant (B) honest (C) above average (D) excellent C
56. That was a dispassionate decision (A) bias (B) personal (C) unaffected (D) ineffective C
57. On the matter of worship, some sit on the fence (A) go to the extreme (B) are decisive (C) are fanatics (D) are undecided D
- Choose the option that is nearest in meaning to the word underlined:**
58. In this matter, we must be prepared to tolerate human frailty. (A) inquisitiveness (B) weakness (C) profligacy (D) innovation. B
59. I detest his lackadaisical attitude. (A) carefree (B) lazy (C) supercilious (D) disloyal. A
60. Nobody will endure such profligate spending habits. (A) generous (B) arrogant (C) wasteful (D) mindless. C
61. Is he oblivious of the political situation in his community? (A) unconscious (B) conscious (C) afraid (D) intolerant. A
62. Many people look into the future with trepidation. (A) certainty (B) uncertainty (C) fear (D) faith. C
63. Can you marry such a lanky man? (A) tall and thin (B) sturdy (C) fat and short (D) tall and short. A
64. The election system we adopted was his brainchild. (A) undoing factor (B) invention (C) power (D) fabrication B
- Choose the option opposite in meaning to the word underlined.**
65. Peter always approaches issues optimistically. (A) realistically (B) B

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
USE OF ENGLISH

- pessimistically (C) carelessly (D) unrealistically.
66. Why should Dixon be evasive in answering the question? (A) indirect (B) direct (C) guessing (D) sure. B
67. John and Ahmed's ideas were speculative (A) stipulative (B) superlative (C) factual (D) attractive. C
68. Henry was admitted to the hospital with profuse bleeding. (A) much (B) little (C) internal (D) continuous B
69. Many people regard him as prolific. (A) diplomatic (B) productive (C) unproductive (D) unacademic. C
70. Our success is paramount in his mind. (A) unimportant (B) important (C) certain (D) uncertain. A
71. In all, I consider the behaviour unpalatable. (A) unacceptable (B) offensive (C) acceptable (D) inoffensive. C
72. Her action will certainly exacerbate the situation. (A) ameliorate (B) worsen (C) aggravate (D) clarify. A
73. Is he really behaving oddly? (A) abnormally (B) normally (C) evenly (D) properly. D
74. He always approaches issues optimistically. (A) realistically (B) pessimistically (C) carelessly (D) unrealistically. B
75. Her health deteriorated rapidly. (A) worsened (B) improved (C) stagnated (D) declined. B
- Which of the following sentences is correct?**
76. (A) One should mind his business. (B) One should mind one's business (C) One should mind her business. B
77. (A) This case is between you and I. (B) This case is between you and me. (C) This case is between the two both of us. B
78. (A) With them around, we have a great problem on our hands. (B) With them around, we have a great problem on our hand. (C) With them around, we have a great problem on hand. A
79. (A) The dog wagged it's tail. (B) The dog wagged its tail. (C) The dog wagged its' tail. B
80. (A) A ten year old boy is missing. (B) A ten-year-old boy is missing. (C) A ten year-old boy is missing. B
81. Choose the option that sounds the same with: two (A) tool (B) too (C) tow (D) to B
82. Choose the option that sounds the same with bear: (A) bare (B) beer (C) bared (D) beard B
83. Choose the option that sounds the same with the given word. Key (A) kiss (B) quay (C) keyed (D) kissed B
- Choose the word that is correctly spelled.**
84. (A) acomodation (B) accommodation (C) accomodation (D) acomodation B
85. (A) embarrassment (B) embarassment (C) embarrasment (D) embarasment A
86. (A) horrific (B) horific (C) horiffic (D) horriffic A
87. As soon as Joy arrived, she started looking for food. The underlined expression is an ----- (A) adverbial phrase of reason (B) adverbial clause of reason (C) adverbial phrase of time (D) adverbial clause of time D

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
USE OF ENGLISH

88. My friend, a brilliant lecturer, won many prizes. The underlined expression is a(n) ... (A) adjectival clause (B) relative clause (C) appositive phrase (D) subject of 'won' C
89. I passed very well because I studied hard. The underlined expression is a (A) relative clause introducer (B) linking verb (C) adverb of reason (D) subordinating conjunction D
90. Bello and I love each other. (A) preposition (B) reciprocal pronoun (C) noun phrase (D) adjectival phrase B
91. I prefer writing to acting. The underlined expressions is a(n) ----- (A) verb (B) participle (C) gerund (D) object C
92. Having finished my assignment, I started watching television. The underlined expression is a(n) ----- (A) infinitive clause (B) gerund (C) participial phrase (D) noun clause C
93. If you leave early, you'll meet Sola at home. The underlined expression is a --- ----- (A) nominal clause (B) verbal clause (C) conditional clause (D) adjectival clause C
94. Wounded by a lion, the hunter trudged home. The underlined expression is a ----- (A) nominal clause (B) verbal clause (C) participial clause (D) adjectival clause C
95. I'm proud of you. The underlined expression functions as (A) prepositional complement (B) adjectival complement (C) subject complement (D) verbal complement B
96. A noun phrase lacks one of the following: (A) noun (B) verb (C) adjective (D) adverb B
97. Eve gave Adam an apple. *An apple* in the sentence functions as ----- (A) subject of the verb 'gave' (B) direct object of the verb (C) indirect object of the verb (D) object complement B
98. I wonder if you know where he lives. This sentence is a(n) (A) thoughtful statement (B) polite command (C) indirect question (D) subtle exclamation. A
99. An example of gradable adjectives is ... (A) each (B) beautiful (C) dead (D) live B
100. A clause differs from a phrase because a clause contains (A) a larger number of words (B) a fewer number of words (C) a finite verb (D) a non-finite verb C

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
PHYSICS

1. A ball is thrown up into the air. At the highest point of its trajectory the ball: (A) Is accelerating downwards (B) has zero acceleration (C) is accelerating upwards (D) is still moving upwards B
2. A ball of mass 200 g moving with a velocity of 8 m/s collides and sticks with another ball of mass 300 g moving in the same direction with velocity 4 m/s. What is the common velocity of the balls after the collision? (A) 5.6 ms^{-1} (B) 2.8 ms^{-1} (C) 11.2 ms^{-1} (D) 1.4 ms^{-1} A
3. A boy holds the end of a rubber cord from which hangs a solid metal ball, if the boy whirls the ball in a horizontal circle, keeping his hand still. If the rubber cord breaks when the ball is at a point on the circle, in what direction will the ball move? (A) towards the hand of the boy B. away from the hand of the boy C. in the direction of the tangent to the circle at the point of break D. None of the above C
4. A force of 20 N applied parallel to the surface of horizontal table is just sufficient to make a block of mass 4 kg set for motion. Find the acceleration when the force is doubled. (A) 2 ms^{-2} (B) 4 ms^{-2} (C) 5 ms^{-2} (D) 10 ms^{-2} C
5. A man walks 1 km due east and then 1 km due north. His displacement is (A) 1 km N15°E (B) 1 km N30°E (C) $\sqrt{2}$ km N45°E (D) 2 km N75°E C
6. A motor car moves with a velocity of 20 ms^{-1} on a rough horizontal road and covers a displacement of 50 m. Find the coefficient of dynamic friction between the tyre and the ground ($g = 10 \text{ ms}^{-2}$) (A) 0.3 (B) 0.6 (C) 0.5 (D) 0.4 D
7. A physics student standing on the edge of a cliff throws a stone vertically *downward* with an initial speed of 10.0 m/s. The instant before the stone hits the ground below, it is traveling at a speed of 30.0 m/s. If the physics student were to throw the rock *horizontally outward* from the cliff instead, with the same initial speed of 10.0 m/s, what is the magnitude of the velocity of the stone just before it hits the ground?
(A) 10.0 m/s (B) 20.0 m/s (C) 30.0 m/s (D) 40.0 m/s C
8. A quantity is defined as the product of cross-sectional area and change in momentum per unit length. Which of the following is its SI unit? (A) Nm (B) kg s^{-1} (C) $\text{kg m}^2 \text{ s}^{-1}$ (D) N kg s^{-1} C
9. A rectangular concrete block 40 cm x 30 cm x 60 cm of mass 10 kg rests on a horizontal flat surface. What is the minimum pressure it can possibly exert on the surface? (A) 816.6 Nm^{-2} (B) 816.6 Nm^2 (C) 408.3 Nm^{-2} (D) 608.4 Nm C
10. A simple hydrometer consists of uniform cylinder suitably weighted to float upright in most common liquids. It is graduated to read the relative density of a liquid directly. Which of the following is NOT correct? (A) When placed in a liquid, it displaces exactly its own weight of the liquid (B) Its graduation increases from top to base (C) When placed in a liquid, it displaces exactly its own volume of the liquid (D) The product of the volume and density of liquid displaced is equal to its mass C
11. A stone which is dropped into a dry well hits the bottom in 2.2 s. How deep is the well? (Take $g=10 \text{ m/s}^2$) (A) 40.4 m (B) 2.4 m (C) 48.4 m (D) 24.2 m D
12. A woman whose mass is 70 kg sits 2.4 m from the fulcrum of a seesaw. At what distance from the fulcrum should a 60 kg man sit to balance the seesaw? (A) 2.8 m (B) 2.4 m (C) 3.2 m (D) 3.8 m A

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
PHYSICS

13. An air bubble trapped at a depth in a liquid rises to the surface. Which of the following is true about its mass and density as it rises? (A) Its mass and density increase (B) Its mass is constant while its density decreases (C) Its mass and density is constant. (D) Its mass is constant while its density increases. B
14. Complete the following sentence: The operation of a hydraulic jack is an application of (A) Pascal's principle. B. Archimedes' principle. (C) Bernoulli's principle. (D) irrotational flow. A
15. Complete the following statement: Today, the standard meter is defined in terms of (A) the distance from the earth's equator to the north pole. (B) the wavelength of light emitted from a krypton atom. (C) the wavelength of light emitted from a sodium atom. (D) the speed of light. D
16. Convert 30 metre per second to centimeter per minute (A) 20,000 cm/min (B) 180,000 cm/min (C) 120,000 cm/min (D) 150,000 cm/min B
17. During a football match, player A kicks the ball 40 m, 30° E of S to player B who instantly kicks it 30 m, 60° E of N. What is the magnitude of the resultant displacement of the ball? (A) 30 m (B) 40 m (C) 50 m (D) 60 m C
18. How much work is done against gravity in sliding a 500g object through 2 m up a smooth plane that is inclined at 30° to the horizontal? ($g = 9.8 \text{ ms}^{-2}$) (A) 9.8 J (B) 19.8 J (C) 16.2 J (D) 4.9 J D
19. If a small body of mass m is moving with angular velocity ω in a circle of radius r , what is its kinetic energy? (A) $m\omega r$ (B) $m\omega^2 r/2$ (C) $m\omega r^2/2$ (D) $m\omega^2 r^2/2$ D
20. In free fall, two balls of masses 20 kg and 10 kg were dropped from a height. If the ball with the smaller mass reached the ground after 4 s, what is the difference between the time the two balls reach the ground? (A) 8 s (B) 2 s (C) 0 s (D) 4 s C
21. In what distance can a 1,500 kg automobile be stopped if the brake is applied when the speed is 20 m/s and the coefficient of sliding friction is 0.7 between the tyres and the ground? (A) 98.10 m (B) 71.67 m (C) 29.15 m (D) 20.10 m C
22. The highest point of a simple pendulum bob is 5cm vertically above the lowest point as it swings to and fro between the two extreme ends. At what velocity does it swing past the lowest point (equilibrium point) where the string is vertical? (take $g = 10 \text{ m/s}^2$) (A) 1 m/s (B) 2 m/s (C) 5 m/s (D) 10 m/s A
23. Three vectors A, B, and C add together to yield zero: $A + B + C = 0$. The vectors A and C point in opposite directions and their magnitudes are related by the expression: $A = 2C$. Which one of the following conclusions is correct? (A) A and B have equal magnitudes and point in opposite directions. (B) B and C have equal magnitudes and point in the same direction. (C) B and C have equal magnitudes and point in opposite directions. (D) A and B point in the same direction, but A has twice the magnitude of B. B
24. Which of the following could be measured in the same units as force? (A) Energy/distance (B) Energy x distance (C) Energy/time (D) Momentum x distance A
25. Which of the following does not affect the pressure at a point beneath the surface of a liquid? (A) Surface area of the liquid. (B) Density of the liquid (C) Depth of the point below the surface (D) Strength of the gravitational field A

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
PHYSICS

26. Which of the following pairs contains one vector and one scalar quantity? (A) Displacement: acceleration (B) Force : kinetic energy (C) Momentum : velocity (D) Power : speed B
27. Which of the following statements is correct (A) uniform speed always implies uniform velocity (B) uniform speed always implies zero acceleration (C) uniform speed may imply non-zero acceleration (D) constant momentum implies constant acceleration C
28. Which of the of the following is a measurement taken with Venier callipers? (A) 2.0 cm (B) 2.00 cm (C) 2.000 cm (D) 2.0000 cm B
29. Which of the units of the following physical quantities are derived? I. Area II. Thrust III. Pressure IV. Mass. (A) I, II, III and IV (B) I, II and III only (C) I, II and IV only (D) I and II only B
30. Which one of the following situations is *not* possible? C
- A. A body has zero velocity and non-zero acceleration.
 - B. A body travels with a northward velocity and a northward acceleration.
 - C. A body travels with a constant velocity and a time-varying acceleration.
 - D. A body travels with a constant acceleration and a time-varying velocity.
31. If C is the thermal capacity of a material of mass m and S is its specific heat capacity, then (A) $C = \frac{S}{m}$ (B) $S = Cm$ (C) $C = Sm$ (D) $DS = m/s$ C
32. A black car can be more uncomfortably hot on a warm day than a white car because (A) it is hot on a warm day (B) a black object is a better absorber of heat (C) black cars have heaters installed in them (D) white cars have air conditioning systems installed in them B
33. A little sag is left in overhead telephone wires (A) because taut wires do not conduct sound easily (B) to allow for the effect of a rise in temperature due to heating effect of current flowing through them. (C) to allow for the effect of a rise in temperature of the surrounding atmosphere. (D) to allow for the effect of a fall in temperature of the surrounding atmosphere. D
34. A piece of copper wire of length 100 cm at 30°C is heated to 120°C. If its linear expansivity is $1.8 \times 10^{-4} / K$, its new length is (A) 166.6 cm (B) 101.6 cm (C) 180.6 (D) 1.08 cm B
35. A sample of a monatomic ideal gas is originally at 20 °C. What is the final temperature of the gas if both the pressure and volume are doubled? (A) 5 °C (B) 80 °C (C) 20 °C (D) 899 °C B
36. A volatile liquid used for cooling purpose in refrigerator is (A) liquid ammonia (B) cold water (C) liquid nitrogen (D) liquid helium A
37. Complete the following statement: A temperature decrease of 30 C° is equal to a temperature decrease of (A) 30 F°. (B) 17 F°. (C) 30 K. (D) 86 F°. D
38. Complete the following statement: *Bimetallic strips* used as adjustable switches in electric appliances consist of metal strips that must have different (A) mass. (B) volume. (C) length. (D) expansion coefficients. D
39. Heat can be transferred from one end of a metal rod in contact with heat to the other end which is in contact with heat through (A) Conduction (B) Convection (C) Radiation (D) Evaporation A

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
PHYSICS

40. Heat supplied or removed from a system which causes a change of state without a change in temperature is (A) Specific heat (B) Heat capacity (C) Latent heat (D) Boiling heat C
41. How many atmospheres of pressure must a litre of gas, initially at a pressure of 1 atmosphere and temperature -20°C , be after it has been compressed to $\frac{1}{2}$ litre at 40°C ? A. 2.47 atm. (B) 4.5 atm. (C) 8.0 atm. (D) 3.8 atm. (E) 16.8 atm. A
42. On a cold day, a good conductor X feels colder to the touch than a poor conductor Y because (A) Y retains more heat than X (B) the temperature of X is lower than that of Y (C) X conducts heat from the body less rapidly than Y (D) X transfers heat from body more rapidly than Y D
43. The boiling point of water does not depend on (A) the impurities in water (B) the external pressure (C) the quantity of water (D) all of the above C
44. The ice and steam points of a local liquid in glass thermometer are 10°a and 90°a respectively. What will the thermometer read when the temperature is 30°C ? (A) 40°a (B) 38°a (C) 36°a (D) 34°a D
45. The lower and upper fixed points on a thermometer are 40 and 120 respectively. Its reading at 60°C is (A) 60 (B) 40 (C) 160 (D) 88 D
46. The pressure exerted by a given mass of gas in a container (A) Decreases if the container is heated (B) Increases if the molecules of the gas move faster (C) Increases if the volume of the container is doubled (D) Decreases as the kinetic energy of the gas molecules increases B
47. The temperature in an electric iron is regulated by (A) thermometer (B) bimetallic strip (C) steel (D) conductor B
48. Water has an anomalous behavior between 0° and 4°C . Which of the following is correct? (A) Mass of water increases between 0°C and 4°C (B) Density of water decreases between 0°C and 4°C (C) Volume of water increases between 0°C and 4°C (D) Volume of water decreases between 0°C and 4°C D
49. What is the Celsius equivalent of 50.0°F ? (A) 10°C (B) 20°C (C) 30°C (D) 40°C A
50. When water is heated in a glass vessel, the level first falls and then rises because (A) The apparent expansion of the water is initially small and later increases. (B) There is anomalous expansion of water. (C) The glass vessel does not expand. (D) Glass vessel expands first before water starts a more rapid expansion. D
51. Which of the following quantities of water has undergone the greatest change from its heat content at melting point? (A) 0.5 kg of water at 3°C (B) 0.2 kg of water at 8°C (C) 0.005 kg of water at 80°C (D) 0.1 kg of water at 12°C B
52. Which would cause a more serious burn: 30 g of steam or 30 g of liquid water, both at 100°C ; and why is this so? C
(A) Water, because it is denser than steam. (B) Steam, because of its specific heat capacity.
(C) Steam, because of its latent heat of vaporization. (D) Water, because its specific heat is greater than that of steam.

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
PHYSICS

53. A certain radioactive element has a half life of 20 years. How long will it take the activity to become $\frac{1}{4}$ of its original? B
(A) 20 years (B) 40 years (C) 60 years (D) 80 years
54. A plane progressive wave is represented by $y = 2 \sin(100\pi t - 0.2\pi x)$ where all the symbols have their usual meanings. What is the velocity of the wave? A
(A) 500 m s^{-1} (B) 400 m s^{-1} (C) 200 m s^{-1} (D) 100 m s^{-1}
55. A point on a stationary wave where there is no movement of the medium is called (A) Node A
(B) Antinode (C) Note (D) Amplitude
56. A uniform wave has a speed of 10m/s and a period of 0.5 s. The distance between two nearest crests is (A) 0.2 m (B) 20 m (C) 2 m (D) 5 m D
57. A vibrating string has a tension of 40N and produces a note of 200Hz when plucked in the middle. When the length of string is unaltered and the tension is increased to 160N, the frequency becomes C
(A) 1600Hz (B) 800Hz (C) 400Hz (D) 200Hz
58. An organ pipe closed at one end is 80cm long. Determine the frequency of the fundamental note assuming that the speed of sound in air is 340m/s? (A) 213Hz (B) 318Hz (C) 425Hz (D) 106Hz D
59. As transverse wave moves through a medium, the particles of the medium (A) vibrate in a path parallel to the path of the wave (B) do not move (C) vibrate in a path perpendicular to the path of the wave (D) vibrate at an angle of 60° to the path of the wave C
60. The sound heard after the reflection of sound wave from a plane surface is known as (A) Echo A
(B) Refraction (C) Vibration (D) Revibration
61. Which of the following properties is not common to all waves? (A) Reflection (B) interference (C) Diffraction (D) Polarization D
62. Which of the following statements is true about electromagnetic waves? (A) They are longitudinal (B) They can be seen (C) They have the same frequency in vacuum (D) They travel at the same speed in a vacuum D
63. Which one of the following statements concerning electromagnetic waves is false? (A) Electromagnetic waves are longitudinal waves. (B) Electromagnetic waves transfer energy through space. (C) The existence of electromagnetic waves was predicted by Maxwell. (D) Electromagnetic waves can propagate through a material substance. A
64. Which one of the following statements concerning waves is false? (A) A wave can have both transverse and longitudinal components. (B) A wave carries energy from one place to another. (C) A wave does not result in the bulk flow of the material of its medium. (D) A transverse wave is one in which the disturbance is parallel to the direction of travel. D
65. A light sensitive area at the back of the eye where images are formed is called (A) Yellow Spot (B) Iris (C) Ciliary Muscle (D) Retina D

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
PHYSICS

66. A luminous object is placed at a given distance from a converging lens of focal length 12cm and a real image is produced. Find the image distance if it is equal to the object distance. (A) 6cm (B) 3cm (C) 12cm (D) 24cm D
67. An object is placed 15 cm in front of a concave mirror of radius 40 cm. The image formed is (A) virtual and 60 cm behind the mirror (B) real and 60 cm in front of the mirror (C) virtual and 40 cm from the mirror (D) at infinity B
68. How far from a concave mirror of radius 120 cm must an object be placed such that its erect image is four times its natural size? (A) 72 cm (B) 64 cm (C) 45 cm (D) 50 cm C
69. How many images are formed when an object is placed in front of two plane mirrors that are inclined at angle 30° to each other? (A) 0 (B) 6 (C) 11 (D) 12 C
70. Professor Peters walks directly toward a plane mirror at a speed of 0.25 m/s. Determine the speed of the image *relative to him*. (A) 0.13 m/s (B) 0.50 m/s (C) 0.25 m/s (D) 0.75 m/s B
71. The angle of incidence in a denser medium when the angle of refraction in the less dense medium is 90° is called a (A) Critical angle (B) Reflected angle (C) Incident angle (D) Emergent angle A
72. The driving mirror is a (A) plane mirror (B) convex mirror (C) concave mirror (D) thick plane mirror B
73. The following are types of a converging lens except (A) biconvex (B) plano-convex (C) mini-convex (D) converging meniscus C
74. When the Sun, the earth and the moon are in line during their movement, with the earth being the opaque object and casting its shadow on the moon, we have (A) Lunar eclipse (B) Total eclipse (C) Partial eclipse (D) Annular eclipse A
75. Which of the following instruments could be used in finding angle of elevation of the sun? (A) Periscope (B) Telescope (C) Kaleidoscope (D) Sextant D
76. Which of the following optical instruments does not depend on the use of plane mirrors? (A) Kaleidoscope (B) Simple microscope (C) Sextant (D) Simple periscope B
77. Which of the following statements supports the assumption that light travels in straight lines? (A) light can be diffracted (B) light can be reflected (C) a source of light produces interferences patterns on a suitably placed screen (D) a source of light produces distinct shadows of opaque objects D
78. Which of the following is correct about nuclear fission? It is: (A) the splitting of a heavy nucleus into two or more lighter particles (B) an agent used to slow down neutrons in a controlled atomic chain reaction (C) combining light atomic nuclei to form heavy (D) the spontaneous disintegration occurring in the nucleus of certain atoms A
79. A light energy E falls on a metal and the electrons with a maximum kinetic energy of 0.2eV are ejected. If the work function of the metal is 0.3eV, what is the value of E? (A) 0.10eV (B) 0.06eV (C) 0.50eV (D) 1.50eV C

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
PHYSICS

80. A nucleus is unstable if (A) it has two or more isotopes (B) its binding energy is not sufficient to hold nuclear particles together. (C) it is very light with very low density (D) it has no significant mass. B
81. A radioactive substance has a half life of 4 years. If its activity today is 200 dps, its activity in 8 years from today is (A) 50 dps (B) 25 dps (C) 20 dps (D) 10 dps A
82. A substance has a half-life of 3min. After 6min, the count rate was observed to be 400. What was its count rate at zero time? (A) 2400 (B) 200 (C) 1200 (D) 1600 D
83. An element and its isotopes differ only in the number of (A) electrons (B) neutrons (C) protons (D) ions B
84. Complete the following sentence: When electrons from a heated filament accelerate through vacuum toward a positive plate, (A) only an electric field will be produced. (B) only a magnetic field will be produced. (C) electromagnetic waves will be produced. (D) longitudinal waves will be produced. C
85. Radioactive elements are (A) chemically reactive elements (B) noble elements (C) rare earth elements (D) elements that spontaneously emit radiation D
86. The following radiations are electrically neutral except (A) α -rays (B) γ -rays (C) X-rays (D) neutrons A
87. Upon which one of the following parameters does the energy of a photon depend? (A) mass (B) polarization (C) amplitude (D) frequency D
88. Which of the following is NOT true about cathode ray? (A) It moves in a straight line (B) It causes fluorescence (C) It possesses a negative charge (D) It can produce β -particles D
89. Who proposed the planetary model of the nucleus? (A) J. J Thomson (B) Albert Einstein (C) Ernest Rutherford (D) Marie Curie C
90. X-rays cannot be used (A) to take photographs of bone structure in the body (B) to detect finger prints (C) to detect flaws in metal castings (D) to detect alterations to works of art B
91. 1 farad is equivalent to: (A) 1 coulomb/volt (B) 1 volt/coulomb (C) 1 joules/coulomb (D) 1 ampere/sec. (E) volts per unit charge A
92. A 0 - 10mA galvanometer with a coil resistance of 30 ohm can be converted to a 0-10A ammeter by using (A) 0.03ohm series resistor (B) 9.99ohm shunt resistor (C) 0.03ohm shunt resistor (D) 9.99ohm series resistor C
93. A battery has an internal resistance of 4 and an emf of 12V. The terminal voltage when a load of 20 Ω is connected across it is: (A) 4 (B) 10 V (C) 20 V (D) 2V B
94. A conducting sphere has a net charge of -4.8×10^{-17} C. What is the approximate number of excess electrons on the sphere if the fundamental natural charge is -1.6×10^{-19} C? (A) 100 (B) 300 (C) 200 (D) 400 B
95. A magnet cannot be demagnetized by (A) heating (B) hammering (C) chemical treatment (D) the use of solenoid through which an alternating current is flowing C
96. An a.c voltage is connected to an RLC series circuit of resistance 5 Ω , inductance 3 mH and a capacitance of 0.05 μ F. Calculate the resonance frequency. (A) 11.0 kHz (B) 12.0 kHz (C) 13.0 kHz (D) 14.0 kHz C

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
PHYSICS

97. An electric heater converts 1KJ of electrical energy to heat energy every 2 second with 100% efficiency. The power produced is (A) 0.5 KW (B) 2 KW (C) 1KW (D) 10W A
98. Complete the following statement: The electromotive force is (A) the maximum potential difference between the terminals of a battery. (B) the force that accelerates electrons through a wire when a battery is connected to it. (C) the force that accelerates protons through a wire when a battery is connected to it. (D) the maximum capacitance between the terminals of a battery. A
99. If a charged body is moving in a circle on a horizontal plane, what is the general direction of the resulting magnetic field? (A) In the plane of the circle. (B) At an angle 45° to the plane of motion. (C) Along the perpendicular axis through the center of the circle. (D) Along the tangent to the circle. C
100. If a resistor is halved in magnitude and the potential across it is tripled, then the ratio of the old current to the new current is (A) 1:3 (B) 3:1 (C) 6:1 (D) 1:6 D
101. The angle between the earth's magnetic field and the horizontal is called angle of (A) declination (B) dip (C) variation (D) inclination B
102. The basic difference between the galvanometer and the electric motor is (A) The size of the magnetic fields (B) The presence of hair springs in the galvanometer (C) The soft iron armature in the galvanometer (D) The couple formed on the parallel sides of the rectangular coil in the B
103. The electromotive force is in such a direction as to oppose the motion or charge producing it. This is a statement of (A) Faraday's Law (B) Lenz Law (C) Maxwell Law (D) Ampere's law B
104. The potential difference across the ends of a wire is doubled in magnitude. If Ohm's law is obeyed, one of the following statements concerning the resistance of the wire is true? (A) The resistance is one half of its original value. (B) The resistance is twice its original value. (C) The resistance is not changed. (D) The resistance increases by a factor of four. C
105. The process of adding impurity to a semiconductor to increase its conductivity is called (A) Doping (B) Annealing (C) Heating (D) Hardening A
106. Which if the following combinations consists of intrinsic properties of materials (A) volume and density (B) density and mass (C) resistance and resistivity (D) density and resistivity. C
107. Which of the following can be measured with a potentiometer: (A) Emf of a secondary cell (B) Resistivity of a wire (C) Potential difference across a conductor (D) Resistance of a wire A
108. Which of the following devices is odd in the list ? (A) thermocouple (B) potentiometer (C) d.c. generator (D) solar cell B
109. Which of the following is an essential physical property of the wires used for making fuses? (A) high thermal conductivity (B) low density (C) low melting point (D) low electrical resistivity C

UNIVERSITY OF IBADAN, IBADAN.
POST-UTME PRACTICE QUESTIONS & ANSWERS
PHYSICS

110. Which one of the following statements concerning the magnetic force on a charged particle in a magnetic field is true? (A) It is a maximum if the particle is stationary. (B) It is a maximum if the particle moves parallel to the field. (C) It acts in the direction of motion for a positively charged particle. (D) It depends on the component of the particle's velocity that is perpendicular to the field. D