

WASSCE / WAEC Integrated Science Nov/Dec 2012 Past Questions and Answers (Objectives)

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Nov. 2012 Objectives

1. Which of the following diseases results from a vitamin deficiency?
A. Ascariasis B. Dysentery
C. Scurvy D. Tuberculosis
2. Viruses can **only** multiply when they are present in
A. culture solution.
B. living organism.
C. dead matter.
D. sugary medium.
3. The diameter of a drinking cup can be measured using a
A. micrometer screw gauge.
B. vernier caliper.
C. spherometer.
D. spring balance.
4. The hormone that controls the level of sugar in the blood of a mammal is
A. adrenaline. B. insulin.
C. testosterone. D. thyroxin.
5. Which of the following properties is **common** to all metals? They
A. have high melting points.
B. are soluble in water.
C. react with dilute sulphuric acid.
D. conduct electricity.
5. The part of a plant on which the shoot system is attached during the process of grafting is called the
A. budwood. B. callus.
C. rootstock. D. scion.
7. Which of the following processes leads to variation in the same species of organisms?
A. Mitotic cell division
B. Meiotic cell division

- C. Cytokinesis
- D. Implantation

8. Land and sea breezes occur as a result of
A. convectional currents.
B. the different phases of the moon.
C. the revolution of the earth.
D. heat transfer by conduction.
9. The number of protons, neutrons and electrons present in the isotope $^{37}_{17}\text{Cl}$ is
A. 17 protons, 17 electrons, 17 neutrons
B. 17 protons, 37 electrons, 17 neutrons
C. 17 protons, 17 electrons, 20 neutrons
D. 17 protons, 37 electrons, 20 neutrons.

Consider the following characteristics of substances to answer Questions 10 and 11.

- I. High melting point
- II. High solubility in water
- III. Low melting point
- IV. High electrical conductivity in solution

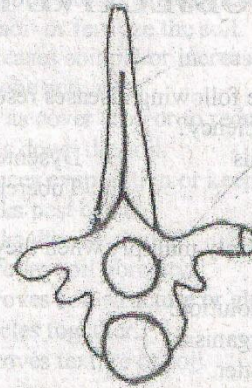
10. Which of the following characteristics are associated with ionic compounds?
A. I and II only B. I and III only
C. I and IV only D. I, II and IV only
11. NaCl possesses characteristic IV because it
A. forms ions in solution.
B. dissolves in water to form a solution.
C. produces tasty solution.
D. forms a colourless solution.
12. The kidney is important to the human body because it
A. converts nitrogenous compounds such as ammonia into urea and uric acid.
B. produces a hormone called adrenaline.
C. removes nitrogenous compounds from blood and also eliminates excess water and salt.
D. excretes carbon dioxide and water vapour.

Nov. 2012 Objectives

13. Green manure becomes beneficial to soil when
- A. the soil is free from pests.
 - B. it is grown with fertilizer.
 - C. it is ploughed into moist soil just before flowing.
 - D. it is ploughed into moist soil after harvesting.
14. Which of the following statements about an atom is **correct**?
- A. Protons outnumber electrons in a neutral atom.
 - B. Neutrons are contained in the nucleus of the atom.
 - C. The L electron shell is the closest to the nucleus
 - D. The atomic number is greater than the mass number
15. The vector responsible for the spread of yellow fever is
- A. aedes mosquito.
 - B. anopheles mosquito.
 - C. culex mosquito.
 - D. housefly.
16. A stone tied to the end of a rope and whirled round performs a type of motion called
- A. oscillatory
 - B. circular.
 - C. rectilinear.
 - D. rotational.
17. During the purification of water for public consumption, chlorine is added to the water in order to
- A. destroy bacteria
 - B. make the water clean.
 - C. give the water taste.
 - D. neutralize the base in the water.

Nov. 2012 Objectives

18. The type of mammalian vertebrae illustrated in the diagram below is



- A. caudal.
 - B. cervical.
 - C. lumbar.
 - D. thoracic.
19. A solution of 2.0 M HCl was diluted to 50 cm³ of 0.1 M HCl. Determine the initial volume of the acid.
- A. 2.5 cm³
 - B. 4.5 cm³
 - C. 5.0 cm³
 - D. 25.0 cm³
20. When a hydrometer floats in a liquid it means that
- A. acceleration due to gravity is not acting on it.
 - B. the relative density of the liquid is unity.
 - C. the surface tension of the liquid is just sufficient to support the hydrometer.
 - D. the weight of the liquid displaced is equal to the weight of the hydrometer.
21. An example of a natural polymer is
- A. polythene.
 - B. polysaccharide.
 - C. polystyrene.
 - D. polyvinylchloride.
22. Which of the following kingdoms possesses vascular tissue?
- A. Animalia
 - B. Plantae
 - C. Prokaryotae
 - D. Protictista

23. A general term used to describe the process in which a metal is tarnished through a chemical reaction is
- corrosion.
 - electroplating.
 - galvanization.
 - Protocista.
24. A characteristic feature of wind pollinated flowers is the presence of
- nectar.
 - sticky pollen grains.
 - scented flowers.
 - feathery stigma.
25. Blood clotting is important to the human body because it
- allows oxygen to be transported in the blood.
 - prevents excessive loss of blood and entry of germs.
 - causes even distribution of blood through the body.
 - gets rid of excess blood in the body.
26. Detergents are preferred to soaps because
- detergents lather more than soap.
 - soaps form scum in any type of water.
 - detergents can be used in any type of water.
 - soaps are less efficient in removing dust.
27. Consider the following statements about formation of soils.
- Lichens aid the formation of soil from rocks.
 - The action of weak carbonic acid on rocks is chemical weathering.
 - High temperatures followed immediately by very cold conditions can result in weathering of rocks
 - Molten magma from volcanic eruption solidifies to give rise to soil directly.
- I and II only
 - II and IV only
 - I, II and III only
 - II, III and IV only

28. Calcium is needed in the human body for the
- development of strong bones and teeth.
 - production of thyroxin.
 - formation of blood plasma.
 - formation of haemoglobin.
29. An air conditioner is rated 1000 W, 240 V. Determine the current it draws when working.
- 0.24 A
 - 2.04 A
 - 4.17 A
 - 8.34 A
30. Soil conservation can be achieved through
- introduction of green manure.
 - intercropping.
 - agroforestry.
 - mixed cropping.
31. Which of the following characteristics in humans can be classified as *inherited characteristic*?
- Intelligence
 - Muscle development
 - Hair colour
 - Scar
32. Which of the factors listed below are considered when selecting a site for a poultry farm?
- Well drained flat land
 - Suitable temperature
 - Land for future expansion
 - Proximity to source of water and electricity
- I only
 - I and II only
 - II, III and IV only
 - I, II and IV only
33. A converging lens of focal length 15.0 cm produces an image of an object placed 45.0 cm from it. Determine the image distance from the lens.
- 3.0 cm
 - 15.0 cm
 - 22.5 cm
 - 30.5 cm

Nov. 2012 Objectives

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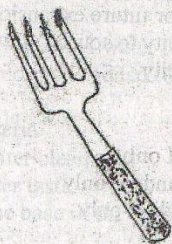
Nov. 2012 Objectives

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Nov. 2012 Objectives

34. A livestock parasite that can be controlled by the drenching method is
 A. mite B. roundworm.
 C. tick. D. tsetsefly.
35. One of the factors to be considered for safe blood transfusion is
 A. weight of the recipient.
 B. age of the recipient.
 C. rhesus factor of the donor and the recipient.
 D. social class of the donor.
36. The reason for using keepers to store magnets is to
 A. increase the strength of the magnet.
 B. cancel the effect of the earth's magnetism.
 C. protect the magnets when they fall.
 D. reduce self-demagnetization.
37. Which of the following practices promotes the growth of more lateral branches in a hedge plant?
 A. Watering the plants regularly
 B. Pruning the plants regularly
 C. Application of fertilizer to the plants
 D. Erecting a fence to support the plant.

The diagram below illustrates a garden tool. Use it to answer Questions 38 and 39.



38. The diagram above illustrates a
 A. hand fork. B. hand trowel.
 C. hoe. D. secateurs.

Nov. 2012 Objectives

39. The diagram illustrated is used to
 A. remove roots and other obstacles from the soil.
 B. remove weeds.
 C. transplant seedlings.
 D. stir soil on garden beds.
40. Which of the following substances is the by-product of photosynthesis?
 A. Carbon dioxide B. Glucose
 C. Oxygen D. Water
41. A quantity of water of mass 5.0 kg is heated through a temperature of 5.0 °C. Determine the heat energy used in the process. [Specific heat capacity of water is 4200 J kg⁻¹K⁻¹]
 A. 50.0 kJ B. 85.0 kJ
 C. 105.0 kJ D. 111.0 kJ
42. The presence of mitochondria in a plant cell indicates that the cell can
 A. produce amino acids.
 B. divide by mitosis.
 C. manufacture their own food.
 D. produce energy.
43. Which of the following statements about simple machines are **correct**?
 They are used to
 I. multiply force.
 II. multiply speed.
 III. cook food.
 IV. transfer energy from one place to another.
 A. I and II only
 B. III and IV only
 C. I, II and III only
 D. I, II and IV only
44. The micro-organisms that usually cause food decay are
 A. bacteria and fungi only.
 B. bacteria and viruses only.
 C. fungi and viruses only.
 D. bacteria, fungi and viruses.

45. The **main** reason for screening water flowing from rivers into fish ponds is to
- make the water clear.
 - eliminate stray fish.
 - eliminate water weed.
 - prevent overflowing.
46. An ecosystem can **best** be described as a
- complete ecological unit that can be studied.
 - place where carnivores and omnivores live.
 - diagram showing a complex food relationship.
 - study of living things and their environment.
47. A wave of frequency 2000 Hz has a wavelength of 10.0 cm. Determine the velocity of the wave.
- 10 ms^{-1}
 - 20 ms^{-2}
 - 100 ms^{-1}
 - 200 ms^{-1}
48. Which of the following pairs of organic compounds will both decolourize bromine water?
- C_3H_4 and C_4H_8
 - C_2H_4 and C_3H_8
 - C_4H_{10} and C_5H_{12}
 - C_2H_6 and C_3H_6
49. Which of the following characteristics are associated with the respiratory surfaces of mammals?
- Large surface area.
 - Thick walled.
 - Always moist.
 - Highly vascularized.
- I and II only
 - III and IV only
 - I, II and III only
 - I, III and IV only
50. Weeds are removed from a fish pond in order to prevent
- absorption and usage of dissolved oxygen in the water.
 - reduction of the amount of faecal contamination of water.

- penetration of sunlight essential for photosynthesis
 - regulation of the amount of the organic manure in water.
51. An instrument used to detect the presence of an electric current is a/an
- ammeter.
 - galvanometer.
 - rheostat.
 - voltmeter.
52. During the process of fertilization in humans only one sperm is involved because
- all other sperms get killed.
 - only one sperm reaches the egg.
 - other sperms are unable to penetrate the egg.
 - only one sperm is released at a time.
53. An alkanolic acid reacts with an alkanol to form
- alkane.
 - alkanoate.
 - alkene.
 - alkyne.
54. Which of the following activities may pollute water bodies?
- Spillage of oil into the sea
 - Discharge of waste from factories into rivers
 - Discharge of treated sewage into streams and lakes
 - Washing of excess fertilizers from farmlands into rivers
55. A force of 30.0 N moves a body through a distance of 1.5 m in the direction of the force. Determine the work done.
- 20.0 J
 - 25.0 J
 - 31.5 J
 - 45.0 J
56. The small intestine of mammals is very long. This is an advantage because it
- prevents the animal from hunger.
 - allows water to be absorbed faster.
 - provides enough surface area for digestion to be completed.

Nov. 2012 Objectives

- D. enables digestion to occur at a faster rate.
57. Which of the following vegetables provides the **largest** amount of roughage in the diet of humans?
- A. Beans B. Cabbage
C. Carrot D. Pepper
58. In computer science, a bit refers to the
- A. smallest unit of information.
B. sequence count.
C. memory count.
D. hundred unit count.

Nov. 2012 Objectives

59. Which of the following devices is used as a thermostat?
- A. Bar and gauge
B. Thermometer
C. Bimetallic strip
D. Ball and ring
60. A phenomena that is caused by the moon is
- A. earthquake. B. sea breeze.
C. tide D. volcano.

Answers to WASSCE / WAEC 2012 Nov/Dec objective questions:

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

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Good luck!