

SC51713
WASSCE 2022
INTEGRATED
SCIENCE 1
Objective Test
1 hour

N:

In

- ❖ PAST QUESTIONS
- ❖ QUIZZES
- ❖ REVISION NOTES
- ❖ SYLLABUS / CHIEF EXAMINERS' REPORT
- ❖ LESSON NOTES
- ❖ FREE COURSES
- ❖ CAREER / SCHOLARSHIP OPPORTUNITIES
- ❖ STUDENT NEWS

THE WEST AFRICAN EXAMINATIONS COUNCIL

West African Senior School Certificate Examination for School Candidates

SC 2022

INTEGRATED SCIENCE 1

PAPER 1

[50 marks]

1 hour


Do not open this booklet until you are told to do so. While you are waiting, read and observe the following instructions. Write your name and index number in the spaces provided above.

1. Use 2B pencil throughout.
2. On the pre-printed answer sheet, check that the following details are **correctly** printed:
 - (a) In the space marked *Name*, check your **surname** followed by your **other names**.
 - (b) In the spaces marked *Examination, Year, Subject and Paper*, check 'WASSCE', 'SC 2022', 'INTEGRATED SCIENCE', and '1' respectively.
 - (c) In the box marked *Index Number*, your **index number** has been printed vertically in the spaces on the left-hand side, and each numbered space has been shaded in line with each digit. **Reshade** each of the shaded spaces.
 - (d) In the box marked *Subject Code*, the digits 517113 are printed vertically in the spaces on the left-hand side. **Reshade** the corresponding numbered spaces as you did for your index number.
3. An example is given below. This is for a male candidate whose *name* is Aaron Kwesi NKOAH. His *index number* is 7102143958 and he is offering *Integrated Science 1*.

THE WEST AFRICAN EXAMINATIONS COUNCIL

PRINT IN BLOCK LETTERS	
Name: NKOAH AARON KWESI	GHA
Examination: WASSCE	Year: SC2022
Subject: INTEGRATED SCIENCE	Paper: 1

INSTRUCTIONS TO CANDIDATES

1. Use grade 2B pencil throughout.
2. Answer each question by choosing one letter and shading it like this: 
3. Erase completely any answer you wish to change.
4. Leave extra spaces blank if the answer spaces provided are more than you need.

INDEX NUMBER	
7	0 1 2 3 4 5 6 7 8 9
1	0 1 2 3 4 5 6 7 8 9
0	0 1 2 3 4 5 6 7 8 9
2	0 1 2 3 4 5 6 7 8 9
1	0 1 2 3 4 5 6 7 8 9
4	0 1 2 3 4 5 6 7 8 9
3	0 1 2 3 4 5 6 7 8 9
9	0 1 2 3 4 5 6 7 8 9
5	0 1 2 3 4 5 6 7 8 9
8	0 1 2 3 4 5 6 7 8 9

SUBJECT CODE	
5	0 1 2 3 4 5 6 7 8 9
1	0 1 2 3 4 5 6 7 8 9
7	0 1 2 3 4 5 6 7 8 9
1	0 1 2 3 4 5 6 7 8 9
1	0 1 2 3 4 5 6 7 8 9
3	0 1 2 3 4 5 6 7 8 9

For Supervisors only

If candidate is absent shade this space 

Answer **all** the questions.

Each question is followed by four options lettered A to D. Find the **correct** option for **each** question and shade in **pencil** on your answer sheet, the answer space which bears the same letter as the option you have chosen.

Give only **one** answer to **each** question. An example is given below.

Which of the following elements is a metal?

- A. Carbon
- B. Copper
- C. Helium
- D. Krypton

The correct answer is Copper, which is lettered **B**, and therefore answer space **B** would be shaded.

☐ A ☒ B ☐ C ☐ D

Think carefully before you shade the answer spaces; erase completely any answers you wish to change.

Do all rough work on this question paper.

Now answer the following questions.

1. One of the advantages of the free range system of poultry is that
 - A. green feed is always not available.
 - B. birds can exercise their bodies.
 - C. record keeping becomes a challenge.
 - D. elaborate housing is required.
2. Which of the following metals is a liquid at room temperature?
 - A. Lead
 - B. Aluminium
 - C. Silver
 - D. Mercury
3. An example of a corm is
 - A. yam.
 - B. ginger.
 - C. cocoyam.
 - D. onion.
4. In the periodic table, all the elements within the same group have the same
 - A. number of electrons available for bonding.
 - B. atomic number.
 - C. number of neutrons in the nuclei.
 - D. number of isotopes.

5. An electrical component that is used to vary ³ electric current is the
 A. ammeter.
 B. voltmeter.
 C. rheostat.
 D. amplifier.
6. *Thinning* out means
 A. spacing out seedlings in the nursery.
 B. removing diseased crops from the farm.
 C. spacing out seedlings when planting.
 D. removing extra seedlings from a stand.
7. A body has a weight of 720 N. Calculate the mass of the body. [$g = 10 \text{ m s}^{-2}$]
 A. 7.2 kg
 B. 72 kg
 C. 720 kg
 D. 7200 kg
8. A mating ratio of 1 : 50 in goat breeding means that 800 females could be serviced by
 A. 50 males.
 B. 16 males.
 C. 6 males.
 D. 60 males.
9. Which of the following statements about resistors connected in parallel is **correct**? The total resistance is
 A. the addition of the resistance.
 B. less than any one of them.
 C. equal to the greatest resistance.
 D. greater than any one of them.
10. Lime juice tastes sour because it contains
 A. acid.
 B. double salt.
 C. alkali.
 D. basic salt.
11. Which of the following alloys contain copper?
 I. Brass
 II. Bronze
 III. Duralumin
 A. I and II only
 B. I and III only
 C. II and III only
 D. I, II and III
12. The radioactive radiation with the **least** penetration power is
 A. alpha particle.
 B. gamma ray.
 C. beta particle.
 D. x- ray.

13. Which of the following forces is **mainly** reduced when a lubricant is applied to the moving parts of an engine?
- Gravitational force
 - Magnetic force
 - Frictional force
 - Centripetal force
14. A car of mass 1600 kg moves with a velocity of 80 m s^{-1} . Determine the momentum of the car.
- $1.28 \times 10^6 \text{ kg m s}^{-1}$
 - $3.2 \times 10^5 \text{ kg m s}^{-1}$
 - $6.4 \times 10^4 \text{ kg m s}^{-1}$
 - $1.28 \times 10^5 \text{ kg m s}^{-1}$
15. Which of the following scientists is associated with the study of inheritance?
- Mendel
 - Linnaeus
 - Lamarck
 - Darwin
16. Terracing checks soil erosion by
- alternating strips of grass-covered ground.
 - reducing speed of run-off water.
 - increasing speed of run-off water.
 - increasing slope of water flow.
17. Aluminium is used for making high tension cables because it is
- light.
 - highly conducting.
 - brittle.
- I and II only
 - I and III only
 - II and III only
 - I, II and III
18. In a step-down transformer,
- there are more turns in the secondary coil than in the primary.
 - the current in the primary coil is more than the current in the secondary coil.
 - the voltage of the secondary coil is higher than that of the primary.
 - there are more turns in the primary coil than in the secondary.
19. Fertilization in flowering plants is known as double because
- the female nucleus is double penetrated by one male gamete while the other regenerate.
 - two cotyledons are formed.
 - two embryo nucleus are formed.
 - one male gamete fertilizes the egg while the second fuses with the polar nuclei.
20. Members of the same species living in the same place at the same time make up the
- trophic level.
 - ecosystem.
 - community.
 - population.
21. The pigment in the skin responsible for skin colouration is
- xanthophyll.
 - melanin.
 - velamin.
 - carotene.

22. An electric appliance is rated 60 W. This means the appliance⁵
- runs on a main voltage of 60 V.
 - uses a current of 60 A per second.
 - uses 60 J of energy every second.
 - has a resistance of 60 W.
23. The gas in the stratosphere that absorbs ultra violet rays to minimize the heat reaching the earth's surface is
- carbon(IV) oxide.
 - chlorofluorocarbons.
 - oxygen.
 - ozone.
24. The component of air used for welding is
- O_2 .
 - N_2 .
 - CO_2 .
 - C_2H_2 .
25. Which of the following statements about small scale industry is correct? It
- makes use of advanced technology.
 - is always capital intensive.
 - is always in rural areas.
 - operates with minimum input of materials.
26. One function of water in the germination of seeds is that it
- causes the seed to produce auxins.
 - kills the germs in the seed.
 - activates the enzymes to breakdown stored food.
 - terminates the period of dormancy.
27. The most important climatic factor affecting crop production in West Africa is
- temperature.
 - sunlight.
 - rainfall.
 - wind.
28. DNA testing is used to determine
- the sex of a baby.
 - whether twins will be born.
 - the father of a child.
 - when a baby is to be born.
29. Which of the following substances contribute(s) to the depletion of the ozone layer?
- Carbon(II) oxide
 - Chlorofluorocarbon
 - Carbon(IV) oxide
- I only
 - II only
 - I and II only
 - II and III only

30. An instrument that could be used to measure the relative density of an acid is
- anemometer.
 - hydrometer.
 - barometer.
 - hygrometer.
31. A disadvantage of practicing mixed cropping is the
- destruction of virgin forests.
 - competition for soil nutrients among crops.
 - establishment of weeds among crops.
 - high rate of disease spread.
32. The essential parts of a flower are the
- stamen and sepal.
 - pistil and stamen.
 - stamen and ovule.
 - pistil and corolla.
33. The gas used in the welding torch belongs to the family of
- alkanoates.
 - alkanes.
 - alkynes.
 - alkenes.
34. The fraction of petroleum distillation used as fuel for heavy duty engine is
- bitumen.
 - diesel.
 - gasoline.
 - kerosene.
35. Which of the following structures in plants prevents water loss?
- Phloem
 - Mesophyll
 - Xylem
 - Cuticle
36. The term used to describe **all** chemical reactions occurring inside an organism is
- metabolism.
 - condensation.
 - oxidation.
 - polymerization.
37. An example of fungal disease of stored grains is
- damping off.
 - soft rot.
 - maize smut.
 - mould.
38. The following substance are air pollutants **except**
- fertilizer.
 - sulphur(IV) oxide.
 - dust.
 - exhaust fumes.

39. Addition of an atom of a pentavalent element to a tetravalent element
- I. is known as doping.
 - II. forms an *n*-type semiconductor.
 - III. forms a *p*-type semiconductor.

Which of the following statements above are **correct**?

- A. I and II only
 - B. I and III only
 - C. II and III only
 - D. I, II and III
40. The blood vessel that carries oxygenated blood to the heart is
- A. pulmonary vein.
 - B. pulmonary artery.
 - C. aorta.
 - D. vena cava.
41. The gas produced when dilute hydrochloric acid reacts with trioxocarbonate(IV) salt is
- A. carbon(IV) oxide.
 - B. carbon(II) oxide.
 - C. hydrogen.
 - D. ammonia.
42. The burdizzo is purposely used for
- A. castrating farm animals.
 - B. earthening-up.
 - C. trimming crop plants.
 - D. ear notching farm animals.
43. During thunderstorm, lightning is seen before the sound is heard although both occur at the same time. This is because
- A. sound needs a material medium for propagation.
 - B. light waves are mechanical.
 - C. light travels faster than sound.
 - D. sound waves are longitudinal whereas light waves are transverse.
44. The material used for propagating cassava is the
- A. root tuber.
 - B. stem cutting.
 - C. sucker.
 - D. seed.
45. The vacuum flask minimizes heat loss by
- I. having a vacuum between the two surfaces.
 - II. polishing the two surfaces.
 - III. using a cork stopper.

Which of the statements above are **correct**?

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

46. The potential difference across the terminals of a resistor is 24 V. Determine the current which will flow through the resistor with resistance $15\ \Omega$.
- A. 40.0 A
 - B. 1.6 A
 - C. 10.0 A
 - D. 0.6 A
47. A flower with both stamens and carpels is said to be
- A. a hermaphrodite.
 - B. irregular..
 - C. monoecious
 - D. dioecious.
48. The **largest** excretory organ of the human body is the
- A. liver.
 - B. skin.
 - C. pancreas.
 - D. lungs.
49. An important function of organic matter in the soil is to
- A. improve texture of the soil.
 - B. control harmful bacteria in the soil.
 - C. serve as a mulch.
 - D. supply both micro and macro nutrients.
50. Good quality seeds should be
- A. free from dirt, weed seeds and pest.
 - B. brightly coloured.
 - C. hard seed coat with small micropyle.
 - D. dressed with recommended chemicals.

END OF PAPER