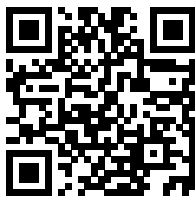


Series: AS211



SESSION – 2

Subject Code: SO

Roll No.:

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Candidates must write the Roll No on the title page of the Question Paper.

Science | Level 2

Time allowed: 1.5 hours

Maximum Marks: 150

Instructions for Candidates:

1. Please verify that this question paper contains **12** printed pages and Ensure that the paper contains a total of **50** questions.
2. Use of mobile phones, smartphones, ipads during examination is **STRICTLY PROHIBITED**.
3. On the OMR sheet, enter all required information carefully in the space provided **ONLY IN BLOCK CAPITALS** and by properly darkening the corresponding bubbles. Incomplete, incorrect, or careless entries may lead to disqualification.
4. Use only a **BLUE or BLACK BALL POINT PEN** for writing entries and filling bubbles. Pencils or other pens are not permitted.
5. **Marking Scheme:** Each question has four alternatives, only one of which is correct. Select the correct option and darken the respective bubble.
 - Each correct answer carries **3 marks**.
 - Each incorrect answer attracts a penalty of **1 mark**.
 - No marks are awarded for unanswered questions.
6. Use only the space provided in the question paper for rough work.
7. Candidates must remain in the examination hall until the exam is officially over. Early exit is not allowed.
8. Do not make stray marks, symbols, or extra writing on the OMR sheet. Fill only the designated bubbles neatly.
9. Since OMR sheets are machine evaluated, changes in entries are **strictly not allowed**.
10. Avoid scratching, overwriting, or erasing, as these may result in wrong evaluation.
11. **DO NOT write anything on the back side** of the OMR sheet.

Multiple Choice Questions

1. Which of the following statement(s) is/are correct?
 - (A) A magnetic needle used in compass is not a magnet.
 - (B) The dial of a compass can rotate freely.
 - (C) One end of the magnetic needle of a compass is generally painted with red colour.
 - (D) All the above are correct.
2. What characteristics do magnetic substances have?
 - (A) They can give a “shock” when you touch them.
 - (B) They can push or pull objects they are not touching.
 - (C) They are always black and cold to touch.
 - (D) They fall faster than other objects when you drop them.
3. A wheel rolling on the surface has
 - (A) a circular as well as rotatory motion
 - (B) a periodic as well as oscillatory motion
 - (C) a rotatory as well as translatory motion
 - (D) a rectilinear as well as rotatory motion
4. Select the one that is different from the others.
 - (A) Motion of a child on a swing
 - (B) Motion of pendulum of a clock
 - (C) Motion of strings of guitar being played
 - (D) None of these
5. Shubham listed the properties of three substances as:
P: Elastic, opaque, non-edible
Q: Liquid, inflammable, edible
R: Hard, floats on water, inflammable
P, Q and R are respectively
 - (A) Plastic, milk and iron nail
 - (B) Sand, honey and soap
 - (C) Rubber band, cooking oil and match-stick
 - (D) Aluminium foil, shampoo and steel plate
6. Which of the following statements is not true?
 - (A) Size of degree is smallest on Celsius scale.
 - (B) Size of degree is smallest on Fahrenheit scale.
 - (C) Size of degree is equal on Celsius and Kelvin scale.
 - (D) None of the above.



7. Which of the following statement(s) is/are correct?
- (A) Water is called "Elixir of Life".
 - (B) Approximately 8 glasses of water are needed to produce a page of your book.
 - (C) About 90% of earth is covered with water.
 - (D) All of the above.
8. Find the odd one out.
- (A) Ploughing
 - (B) Handpicking
 - (C) Winnowing
 - (D) Threshing
9. Choose the correct alternative to complete the given analogy.
Muddy water : sedimentation :: Butter from milk : _____
- (A) Filtration
 - (B) Churning
 - (C) Sublimation
 - (D) Evaporation
10. Which of the following is **NOT** a characteristic of bean seeds?
- (A) They have two cotyledons.
 - (B) They are non-albuminous.
 - (C) They are examples of epigeal germination.
 - (D) They are monocotyledonous.
11. Read the given paragraph where few words have been italicised.
Troposphere is the first layer of atmosphere closest to the Earth. Mesosphere is an important layer as it contains ozone gas that absorbs harmful ultraviolet rays of the Sun and protects us from its harmful effects. Stratosphere is the layer where most meteorites burn up before reaching the Earth's surface. Thermosphere is the uppermost layer of Earth's atmosphere.
Select the incorrect statement regarding them.
- (A) Troposphere should not be changed as it is correctly mentioned.
 - (B) Mesosphere and Stratosphere should be interchanged.
 - (C) Thermosphere should be changed to Exosphere.
 - (D) Thermosphere and Troposphere should be interchanged.
12. Read the following two statements carefully and choose the correct option.
Statement I: Renewable resources can be used again and again.
Statement II: Coal and petroleum are renewable resources.
- (A) Statement I is correct while Statement II is incorrect.
 - (B) Statement II is correct while Statement I is incorrect.
 - (C) Both statements are correct.
 - (D) Both statements are incorrect.



13. The first artificial satellite launched by India is
- (A) Aryabhata
 - (B) Rohini
 - (C) Bhaskara
 - (D) APPLE
14. Orbital height of the geostationary satellites (in kms) is
- (A) 16,000
 - (B) 26,000
 - (C) 36,000
 - (D) 46,000
15. A car at 7:30 a.m. is moving at a constant speed of 4 km min^{-1} and an odometer reading recorded is 28568 km. What would be the odometer reading at 9:15 a.m.?
- (A) 28673 km
 - (B) 28988 km
 - (C) 29255 km
 - (D) 28568 km
16. Two bodies P and Q are in contact with each other, such that P is at a higher temperature than Q. When equilibrium temperature is reached, X units of heat energy is given by the body P. The heat energy received by the body Q is:
- (A) more than X
 - (B) less than X
 - (C) equal to X
 - (D) None of the above
17. The land breeze blows from land to sea in coastal regions, because the land:
- (A) cools slowly as compared to seawater
 - (B) cools rapidly as compared to seawater
 - (C) cools at the same rate as seawater
 - (D) None of the above
18. When we switch on an electric bell,
- (A) the flow of electric current through the electromagnet in the bell stops.
 - (B) the current starts to flow through the electromagnet.
 - (C) there occurs a decrease in the voltage of the current flowing through the electromagnet.
 - (D) None of the above.
19. Which shadow is formed during a lunar eclipse?
- (A) Moon's shadow on Sun
 - (B) Earth's shadow on Moon
 - (C) Sun's shadow on Earth
 - (D) Moon's light blocked by clouds
20. What would happen if the Earth did not tilt?
- (A) The Moon would fall
 - (B) Days would be shorter
 - (C) The Sun wouldn't rise
 - (D) There would be no seasons
21. Which of the following statements is the correct definition of ores?
- (A) Synthetic compounds of metals from which metals can be obtained economically.



- (B) Naturally occurring compounds of metals from which metals can be obtained economically.
- (C) Naturally occurring compounds of metals from which metals can be obtained in easiest way possible.
- (D) Naturally occurring compounds of metals from which metals can be obtained in semi-pure state.
22. When a few drops of phenolphthalein are added to sample 'A', it turned pink. To this pink coloured solution we added a few drops of sample 'B'. With continuous stirring, the pink colour disappears. Samples 'A' and 'B' are:
- (A) sample 'A' is acidic and sample 'B' is basic.
- (B) sample 'A' is basic and sample 'B' is acidic.
- (C) sample 'A' is basic and sample 'B' is neutral.
- (D) sample 'A' is acidic and sample 'B' is neutral.
23. We turn on a bulb and the filament changes its colour and becomes bright. Is it a chemical change like burning?
- (A) No, filament burns itself but that is not a chemical change.
- (B) Yes, filament burns itself like wood to give light.
- (C) No, filament does not change into something new.
- (D) Yes, filament made up of tungsten changes to its oxide on burning.
24. What is the relationship between emotional changes and positive development?
- (A) Emotional changes hinder all forms of growth.
- (B) Emotional changes should be ignored.
- (C) Emotional changes can be redirected for creativity and social involvement.
- (D) Emotional changes have no impact on behaviour.
25. Wisdom teeth normally grow during the age of
- (A) 17–30 years
- (B) 12–15 years
- (C) 34–40 years
- (D) 40–45 years
26. Which of the following is **not** correct for small intestine?
- (A) It is about 1.5 m long.
- (B) It is about 7.5 m long.
- (C) Its walls secrete juices.
- (D) It receives secretions from liver.
27. Anemometer is used to measure
- (A) amount of water vapour in the air.
- (B) wind velocity.
- (C) amount of rainfall.
- (D) air pressure.
28. Which statement is **FALSE** for the Meteorological Department?
- (A) It helps farmers by providing monsoon and rainfall reports.
- (B) It uses satellite data to map patterns of heating and cooling of regions of Earth.



- (C) It calculates temperature of different places.
- (D) It does not give national alerts like cyclones, etc.

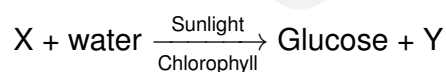
29. A person put warm water in an aquarium, thinking that the fish would be more comfortable in it. However, the fish died. What can be the reason for this?

- (A) The concentration of oxygen decreases in warm water.
- (B) The concentration of carbon dioxide increases in warm water.
- (C) Fish cannot bear the extreme heat of the water.
- (D) All of these.

30. Arteries are a type of blood vessel

- (A) which carry oxygen-rich blood from the heart to all other parts of the body.
- (B) which carry deoxygenated blood from the heart to all other parts of the body.
- (C) which carry deoxygenated blood and have thick elastic units.
- (D) None of the above is correct.

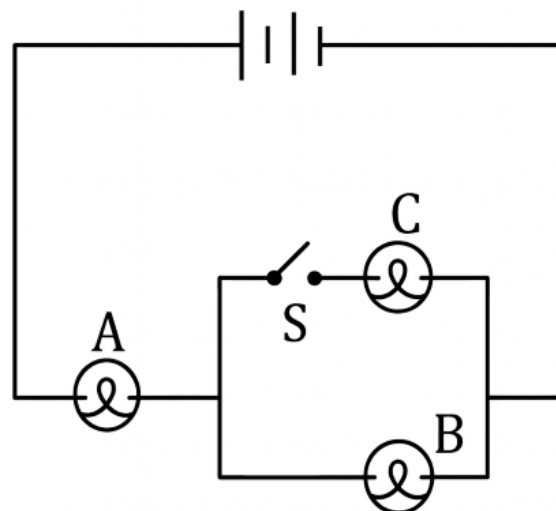
31. The equation given below represents photosynthesis:



Which of the following is represented by X and Y in the given equation?

- (A) X – Carbon dioxide, Y – Oxygen
- (B) X – Oxygen, Y – Carbon
- (C) X – Carbon dioxide, Y – Hydrogen
- (D) X – Oxygen, Y – Carbon dioxide

32. In the figure given below, A, B and C are identical bulbs. What changes occur in the brightness of bulbs A and B when the switch S is closed?



- (A) Brightness of A increases but that of B decreases.
- (B) Brightness of A remains the same but that of B decreases.
- (C) Brightness of both A and B decreases.
- (D) Brightness of both A and B increases.

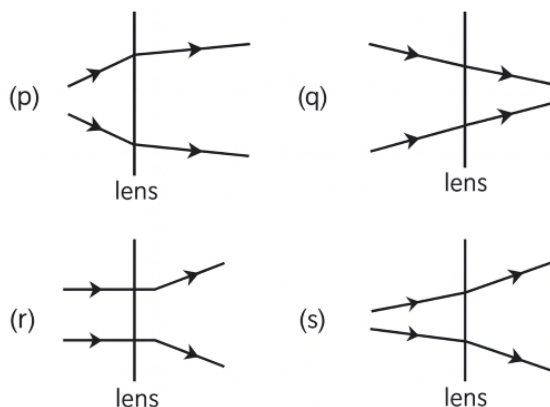
33. **Directions:** Match Column I with Column II and select the correct answers using the code given below the columns.

Column-I	Column-II
(1) Convex lens	(p) Used by dentist to see enlarged image of teeth
(2) Convex mirror	(q) Used as a magnifying glass
(3) Concave mirror	(r) Can form image of the object spread over a large area
(4) Curved mirror	(s) Common example of a spherical mirror



- (A) 1 → (p), 2 → (q), 3 → (r), 4 → (s)
 (B) 1 → (q), 2 → (r), 3 → (p), 4 → (s)
 (C) 1 → (r), 2 → (s), 3 → (q), 4 → (p)
 (D) 1 → (s), 2 → (p), 3 → (r), 4 → (q)

34. Which diagram shows rays of light passing through a converging lens?



- (A) p
 (B) q
 (C) r
 (D) s

35. Menstrual hygiene ensures both _____ and health. Proper menstrual hygiene helps in preventing _____.

- (A) fashion and fever
 (B) comfort and infections
 (C) play and headaches
 (D) money and hair loss

36. Which of the following nutrients helps in optimal bone growth during adolescence?

- (A) Iron
 (B) Vitamin C
 (C) Calcium
 (D) Iodine

37. Which of the following food groups provides calcium, proteins, and fats?

- (A) Fruits
 (B) Milk, millets, curd
 (C) Grains and cereals
 (D) Spices

38. Match the nutrient with its function:

Column I	Column II
1. Iron	a. Bone growth
2. Proteins	b. Formation of blood
3. Calcium	c. Gain strength and growth

Options:

- (A) 1 – b, 2 – c, 3 – a
 (B) 1 – a, 2 – b, 3 – c
 (C) 1 – c, 2 – a, 3 – b
 (D) 1 – b, 2 – a, 3 – c

39. Which combination of statements is correct?
 I. Human urine contains more than 90% of water.

II. Ureters carry urine from kidneys to bladder.

III. Urethra also produces urine when it filters blood.

IV. Bladder stores urine until it is passed out of the body through urethra.

- (A) Only I and III



- (B) Only II and III
 (C) Only I, II and IV
 (D) All I, II, III and IV

40. **Directions:** Match Column I with Column II and select the correct answers using the code given below the columns.

Column-I	Column-II
(1) Nutrition	(p) Mode of nutrition
(2) Autotrophic	(q) Basic unit of structure of all living beings
(3) Cell	(r) Mode of taking food
(4) Nutrients	(s) Components of food necessary for our body

- (A) 1 → (p), 2 → (q), 3 → (r), 4 → (s)
 (B) 1 → (q), 2 → (r), 3 → (s), 4 → (p)
 (C) 1 → (r), 2 → (p), 3 → (q), 4 → (s)
 (D) 1 → (r), 2 → (s), 3 → (p), 4 → (q)

41. Match the organisms in Column I with their action in Column II.

Column I	Column II
(i) Bacteria	(a) Fixing Nitrogen
(ii) <i>Rhizobium</i>	(b) Setting of curd
(iii) <i>Lactobacillus</i>	(c) Baking of bread
(iv) Yeast	(d) Causing Malaria
(v) A protozoan	(e) Causing Cholera
(vi) A Virus	(f) Causing AIDS
	(g) Producing antibodies

- (A) (i)–(e), (ii)–(a), (iii)–(b), (iv)–(c), (v)–(d), (vi)–(f)
 (B) (i)–(b), (ii)–(a), (iii)–(c), (iv)–(g), (v)–(d), (vi)–(f)

- (C) (i)–(a), (ii)–(b), (iii)–(c), (iv)–(f), (v)–(g), (vi)–(d)
 (D) (i)–(a), (ii)–(b), (iii)–(c), (iv)–(d), (v)–(e), (vi)–(f)

42. Match the names of scientists given in Column A with the discovery made by them given in Column B.

Column A	Column B
(a) Louis Pasteur	(i) Penicillin
(b) Robert Koch	(ii) Anthrax bacterium
(c) Edward Jenner	(iii) Fermentation
(d) Alexander Fleming	(iv) Small pox vaccine
	(v) Typhoid

- (A) (a)–(iii), (b)–(ii), (c)–(iv), (d)–(i)
 (B) (a)–(ii), (b)–(v), (c)–(iii), (d)–(i)
 (C) (a)–(i), (b)–(iv), (c)–(ii), (d)–(iii)
 (D) (a)–(v), (b)–(ii), (c)–(i), (d)–(iv)

43. Three beakers labelled as A, B and C each containing 25 mL of water were taken. A small amount of NaOH, anhydrous CuSO_4 and NaCl were added to the beakers A, B and C respectively. It was observed that there was an increase in the temperature of the solutions contained in beakers A and B, whereas in case of beaker C, the temperature of the solution falls. Which one of the following statement(s) is(are) correct?

- (i) In beakers A and B, exothermic process has occurred.
 (ii) In beakers A and B, endothermic process has occurred.
 (iii) In beaker C, exothermic process has occurred.
 (iv) In beaker C, endothermic process has occurred.



- (A) (i) only
(B) (ii) only
(C) (i) and (iv)
(D) (ii) and (iii)
44. Which of the following gases can be used for storage of a fresh sample of an oil for a long time?
- (A) Carbon dioxide or oxygen
(B) Nitrogen or oxygen
(C) Carbon dioxide or helium
(D) Helium or nitrogen
45. What happens when calcium is treated with water?
- (i) It does not react with water.
(ii) It reacts violently with water.
(iii) It reacts less violently with water.
(iv) Bubbles of hydrogen gas formed stick to the surface of calcium.
- (A) (i) and (iv)
(B) (ii) and (iii)
(C) (i) and (ii)
(D) (iii) and (iv)
46. Generally metals react with acids to give salt and hydrogen gas. Which of the following acids does not give hydrogen gas on reacting with metals (except Mn and Mg)?
- (A) H_2SO_4
(B) HCl
(C) HNO_3
(D) All of these
47. Which of the following can make a parallel beam of light when light from a point source is incident on it?
- (A) Concave mirror as well as convex lens
(B) Convex mirror as well as concave lens
(C) Two plane mirrors placed at 90° to each other
(D) Concave mirror as well as concave lens
48. In *Spirogyra*, asexual reproduction takes place by
- (A) breaking up of filaments into smaller bits
(B) division of a cell into two cells
(C) division of a cell into many cells
(D) formation of young cells from older cells
49. The ability of a cell to divide into several cells during reproduction in *Plasmodium* is called
- (A) budding
(B) reduction division
(C) binary fission
(D) multiple fission
50. The correct sequence of reproductive stages seen in flowering plants is
- (A) gametes, zygote, embryo, seedling
(B) zygote, gametes, embryo, seedling
(C) seedling, embryo, zygote, gametes
(D) gametes, embryo, zygote, seedling



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ScienceX Olympiad — Post-Exam Add-On Page

Make this page useful for reflection, family engagement, and classroom reuse.

1) Reflection & Self-Assessment

My Performance Tracker

- Questions I found **easy**:

- Questions I found **tough**:

- One concept to revise:

Confidence Rating:

- ☐ Fully confident ☐ Partly confident ☐ Guessed the answer

2) Challenge Your Parent / Friend

Pick **any 3 questions** from this paper and ask your parent/sibling/friend to solve them.

Q. No.	Solved? (Y/N)	Time Taken	Who explained better?

3) Teacher's Corner

Teachers can reuse this paper for continued learning:

- Select 5 questions for a **weekly quiz**.
- Discuss the **most missed** question in class.
- Post one “**Question of the Week**” on the noticeboard.

4) Next Steps for Students

-
- File this paper in your **ScienceX Portfolio**. Reattempt it in **2 weeks** and compare scores.
 - Submit your best written explanation (any one question) to your teacher or ScienceX.
 - Top student explanations may feature in the **ScienceX Young Innovators Journal**.