KOTHARI INTERNATIONAL SCHOOL, NOIDA
ANNUAL EXAMINATION, SESSION: 2025-26
GRADE: 8 SUBJECT: SCIENCE
SET B SECTION A (OBJECTIVE)

DAY & DATE: TUESDAY - MARCH 13, 2026
MAXIMUM MARKS: 20 **TIME ALLOTTED: 30 MINUTES**
NAME: _____ **ROLL NO: _____**

GENERAL INSTRUCTIONS:

i. This question paper consists of 5 pages and contains 18 questions.
ii. Read the question carefully and then attempt it.
iii. All questions are compulsory.

Q1. A student is experimenting with a plane mirror and a laser pointer. They notice that when the laser hits the mirror at a certain angle, the reflected beam always follows a predictable path. They also observe that their reflection in the mirror appears to have the left and right sides interchanged. (1x 3= 3)

i) If the angle between the incident ray and the mirror surface is 30°, what is the angle of reflection?

a) 30° b) 60° c) 90° d) 150°

ii) The phenomenon of "left-right reversal" mentioned in the passage is known as:

a) Vertical Inversion b) Diffused Reflection
c) Lateral Inversion d) Refraction

iii) Which of the following is NOT a characteristic of an image formed by a plane mirror?

a) The image is virtual and erect.
b) The image is of the same size as the object.
c) The image is formed at the same distance behind the mirror as the object is in front.
d) The image is real and can be caught on a screen.

Q2. A solid rectangular brick of mass **6 kg** has dimensions **30 cm × 20 cm × 10 cm**. The brick is placed on a table in horizontal positions so that different faces touch the surface. What is the pressure exerted by the brick on the table when its **largest face** is in contact with the surface? (1)
(Take g=10 m/s^2) (Use F= m*g)
a) 1000 Pa b) 8000 Pa c) 2000 Pa d) 4000 Pa

Q3. Which of the following represents the correct biological sequence for reproduction in frogs? (1)

a) Internal fertilization →Zygote →Tadpole →Adult Frog
b) Release of gametes into water →External fertilization → Zygote →Tadpole
c) Formation of zygote →External fertilization → Egg production → Tadpole
d) Asexual budding → External fertilization → Embryo → Adult Frog

Q4. If a glass plate/slide is held into the luminous part of candle flame we see a circular blackish ring that represents: (1)

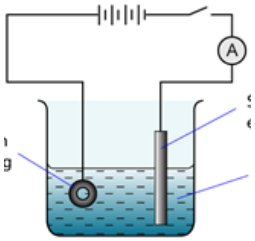
a) unburnt carbon particles
b) formation of coal
c) burnt carbon particles
d) Both burnt carbon particles & formation of coal

Q5. During a science experiment, a student lights a candle and places it inside a jar filled with a gas. The candle continues to burn brightly, but the gas itself does not catch fire. Which gas is present in the jar? (1)

a) Nitrogen
b) Oxygen
c) Carbon dioxide
d) Hydrogen

Q6. A student wants to electroplate a metal ring with nickel. They use a nickel sulphate solution as the electrolyte. However, by mistake, the student connects the metal ring to the positive terminal of the battery and the nickel rod to the negative terminal. (1)

What is most likely to happen after 20 minutes?



a) Nickel will deposit on the metal ring.
b) The metal ring will slowly dissolve into the solution.
c) Nickel will deposit on the nickel rod.
d) The solution will not conduct electricity.

Q7. Arjun, a 14-year-old boy, notices that his voice has become "crackly" and significantly deeper over the past few months. During a school health check-up, the doctor explains that a hormone called **testosterone** is causing his larynx (voice box) to grow and his vocal cords to thicken. (1)

Based on the doctor's explanation, how should Arjun's voice change be classified in the context of human development?

a) A Primary Sexual Characteristic, because the deepening of the voice is a necessary requirement for the physical production of sperm cells.

b) A Secondary Sexual Characteristic, because it is a physical sign of maturity triggered by hormones that distinguishes him from females but is not an organ used for reproduction.

c) A Behavioural Adaptation, because Arjun is consciously changing the way he speaks to sound more like the adults in his environment.

d) A Homeostatic Adjustment, because the thickening of the vocal cords is the body's way of regulating his internal respiratory pH levels during growth spurts.

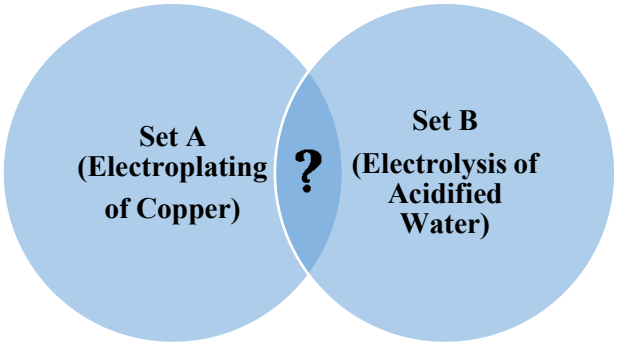
Q8. A boy pushes a heavy box across the floor, but it does not move. What can we conclude about the forces acting on the box? (1)

a) There is no force acting on the box.
b) The forces acting on the box are balanced.
c) The gravitational force has stopped working.
d) The box has no mass.

Q9. **Look at the following chromosomal combination for a zygote. If an egg (X) is fertilized by a sperm carrying a 'Y' chromosome, what will be the sex of the child?** (1)

a) Female, because the egg always provides an X chromosome.
b) Male, because the Y chromosome from the father determines maleness.
c) Female, because the Y chromosome is recessive.
d) It cannot be determined until the second trimester.

Q10. In a Venn diagram comparing 'Electroplating of Copper' (Set A) and 'Electrolysis of Acidified Water' (Set B), which of the following statements would correctly be placed in the intersection (Both A and B)? (1)



a) The mass of the cathode remains unchanged while the anode dissolves.
b) New chemical substances are formed in the form of gases at both electrodes.
c) The concentration of the electrolyte remains constant throughout the process.
d) The process involves the migration of cations toward the negative electrode.

Q11. While **fertilization** is the ----------, the **zygote** is the----------. (1)

a) formation of gametes; result of cell division.
b) process of growth; final stage of an embryo.
c) fusion of gametes; resulting single-celled organism.
d) result of mating; process of DNA replication.

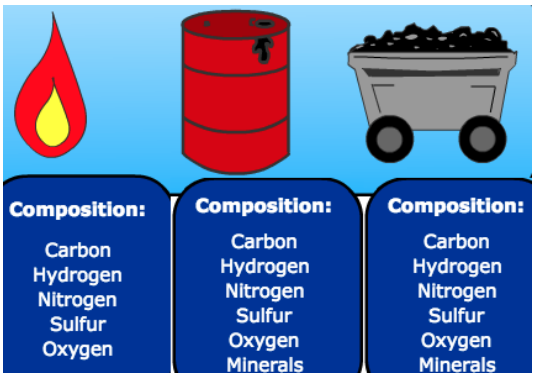
Q12. A student heats coal strongly in a closed test tube without air. After some time, three products are formed — a solid black substance, a thick dark liquid, and a combustible gas.

Based on this observation, which of the following conclusions is correct?

a) The solid product formed is charcoal, which is mainly used as a fuel for cooking only.
b) The liquid product formed is a mixture of many chemicals and is used to make dyes, drugs, and road surfacing materials.
c) The gas produced cannot burn and has no industrial use.
d) The process is a physical change because no new substances are formed.

Q13. A fuel is transported from offshore drilling sites through pipelines to refineries, where it is separated into petrol, diesel, lubricating oil, and bitumen by **fractional distillation.** At room temperature, this fuel flows easily and must be stored in leak-proof containers**. Based on these properties and the diagram showing fossil fuels in different physical states, identify the fuel.** (1)

a) Coal
b) Coke
c) Petroleum
d) Natural gas



SECTION B

Each question consists of two statements, namely Assertion (A) and Reason (R).
For selecting the correct answer use the following code: (Please write the correct option in the box. Do not write the full sentence)
(a) Both Assertion (A) and Reason (R) are the true and Reason (R) is a correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are the true but Reason (R) is not a correct explanation of Assertion (A).
(c) Assertion (A) is true and Reason (R) is false.
(d) Assertion (A) is false and Reason (R) is true.
(e) Both Assertion (A) and Reason (R) are incorrect.

Q14. **Assertion (A):** The force required to keep a wheeled suitcase in uniform motion is substantially less than the force required to slide the same suitcase. (1)
Reason (R): When an object rolls over a surface, the area of contact is reduced to a point or a line, effectively minimizing the interlocking of surface irregularities compared to sliding.

Q15. **Assertion (A):** Solid potassium nitrate (KNO_3) can conduct electricity because it contains charged particles. (1)
Reason (R): When potassium nitrate is dissolved in water, its particles separate and are free to move, so the solution can conduct electricity.

Q16. **Assertion (A):** A plane mirror forms a real image of an object because the light rays physically meet at a point behind the mirror surface. (1)
Reason (R): Image formation in mirrors is primarily a result of **refraction**, where light changes speed and direction as it passes through the silvered glass.

Q17. **Assertion (A):** The endocrine system is described as a 'chemical messenger system' because it secretes hormones directly into the bloodstream to reach distant target organs. (1)
Reason (R): Hormones are non-nutrient chemicals that act as intercellular messengers and are produced in trace amounts.

Q18. **Assertion (A):** The process of heating coal strongly in the absence of air to produce coke is known as carbonisation. (1)
Reason (R): Carbonisation involves the thermal decomposition of coal, leaving behind a carbon-rich, porous, and hard residue that serves as an excellent reducing agent.