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

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

GENERAL INSTRUCTIONS:

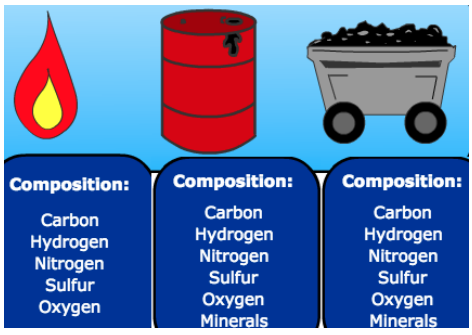
i. This question paper consists of 5 pages and contains 18 questions.
ii. Read the question carefully and then attempt it.
iii. All questions are compulsory.

Q1. Match the following: (0.5 x6= 3)

Column A (Description/Scenario)	Column B (Term/Value)
1. The angle between the incident ray and the normal.	**A.** Diffused Reflection
2. The angle between the incident ray and the reflecting surface when the angle of reflection is 40^0	**B.** Infinite
3. Number of images formed when two plane mirrors are placed parallel to each other.	**C.** Angle of Reflection
4. The phenomenon responsible for the word "AMBULANCE" being written in reverse	**D.** 50^0
5. Reflection from a rough surface where the laws of reflection still hold true for every point.	**E.** 90^0
6. The total angle between the incident ray and the reflected ray when the angle of incidence is 45^0	**F.** Lateral Inversion
	G. Regular Reflection
	H. Angle of Incidence
	I. 40^0

Q2. 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



Q3. A student sets up an experiment to heat powdered coal in a test tube in the absence of air, a process known as **destructive distillation**. After the reaction is complete, they observe three distinct physical states of matter (solid, liquid, and gas) being produced. (1)

Based on the products of this process, which of the following analytical conclusions is **correct**?

a) The gas collected in the experiment is primarily a mixture of propane and butane, which is used globally as Liquefied Petroleum Gas (LPG).

b) The liquid byproduct is a thick, black substance that is a pure compound used directly to manufacture naphthalene balls and explosives without further processing.

c) The solid residue left behind contains a high percentage of carbon and is an essential reducing agent in the industrial extraction of metals like iron.

d) The process is a physical change because the products obtained can be recombined under high pressure to re-form the original piece of bituminous coal.

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. 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.

Q7. 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

Q8. 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.

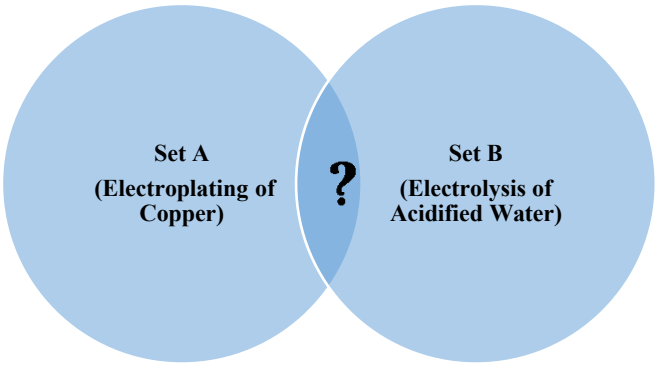
Q9. A boy pushes a heavy box across the floor, but it does not move. What can we conclude about the forces acting on the box? (1)

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.

Q10. A middle school counsellor is preparing a workshop titled *"The Transition to Adulthood."* She explains that this life stage is characterized by a "growth spurt," the onset of puberty, and a shift toward more independent thinking. She notes that while the exact timing varies for every individual, there is a standard range when most children biologically enter this phase. (1)

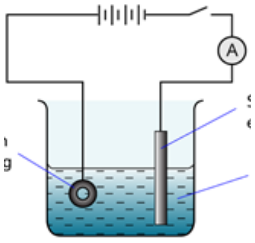
Based on the counsellor's description of the start of **adolescence**, which age group is she most likely targeting for the beginning of this workshop?
a) 5–7 years, because this is when children start primary school and begin to develop basic social skills.
b) 8–10 years, because this is the late childhood phase where physical growth is most stable and slow.
c) 11–13 years, because this typically marks the biological onset of puberty and the transition into the teenage years.
d) 15–17 years, because this is the final stage of adolescence where physical growth is almost complete.

Q11. 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 movement of cations toward the negative electrode.

Q12. 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.

Q13. A solid rectangular brick of mass 4 *kg* has dimensions 20 *cm*×10 *cm*×5 *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? (**Take *g*=10 *m*/*s*^{2}) (Use F= m*g)** (1)

a) 6000 Pa b) 8000 Pa c) 2000 Pa d) 4000 Pa

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):** It is much easier to move a heavy suitcase if it is fitted with wheels than to slide it across the floor. (1)
Reason (R): Rolling friction is significantly smaller in magnitude than sliding friction for the same set of surfaces.

Q15. **Assertion (A):** Solid sodium chloride (common salt) does not conduct electricity. (1)
Reason (R): When sodium chloride is melted, its ions are free to move and can carry electric current.

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.