GRADE – VIII MODEL PAPER

SCIENCE

CRQ Paper Marking Scheme

Q1: **6 Marks**

Classify the following actions as voluntary or involuntary action.
Writing, reading, inhaling, speaking, eye blinking, walking

Possible Answer:

Voluntary Action	Involuntary Action
Writing Reading Speaking Walking	Inhaling Eye blinking

Checking Hints:

Total 6 Marks
1 mark for each correct placement (6 required)

Q2: **6 Marks**

a. Define biotechnology.

b. Ibad is a tall, fair boy with blue eyes. He is very good in sports and is very intelligent.
Which of the above characteristics has Ibad acquired from his parents?

Possible Answer:

a. The use of biotechnological processes for the welfare of mankind is called biotechnology.
b. Tall, fair, blue eyes and intelligent

Checking Hints:

Total 6 Marks
2 marks for definition (2 key phrases)
1 mark for each character (4 required)

Q3: **6 Marks**

a. Name TWO pollutants that can cause acid rain. Which acids are formed during acid rain?

b. Name TWO sources which add sulphur dioxide in the atmosphere.

Possible Answer:

a. Pollutants: SO_2, NO_2, CO_2
   Acids: H_2SO_4, HNO_3, H_2CO_3
b. Burning of fossil fuels, industrial smoke, wild fire, volcano

Checking Hints:

Total 6 Marks
1 mark for each pollutant (2 required)
1 mark for each acid (2 required)
1 mark for each source (2 required)

Q4: **6 Marks**

Differentiate between exothermic and endothermic reactions. Give at least THREE points.

Possible Answer:

Exothermic Reaction	Endothermic Reaction
The heat is released.	The heat is absorbed.
Total energy of the product is less than the reactants.	Total energy of the product is more than the reactants.
The container becomes hot.	The container cools down.

Checking Hints:

Total 6 Marks
2 marks for each complete difference (3 required)

Q5a: **3 Marks**

Give THREE uses of acids from daily life.

Possible Answer:

Uses of Acids:

Used as preservative in refrigerators, medicines, cleaning solution, car batteries, removal of rust.

Checking Hints:

Total 3 Marks
1 mark for each use (3 required)

Q5b: **3 Marks**

Describe how an aerosol works.

Possible Answer:

It includes the following points:

i. The aerosol has some empty space above the liquid where the gas is enclosed. When bottle is shaken gas mixes with liquid and produces a high pressure.
ii. When the valve is opened by pressing the button, the high pressure gas liquid mixture inside the bottle comes outside where the pressure is low.
iii. In this way the expanding gas forces the liquid out of the nozzle.

Checking Hints:

Total 3 Marks
1 mark for each point (3 required)

Q6: **6 Marks**

a. What are prefixes?
b. Convert
   (i) 1 milli second to second
   (ii) 1 m to cm
c. Complete the following by using prefixes.
   (i) 10^{-6} gm = _____
   (ii) 10^{-3} gm= _____
   (iii) 10^{3} gm = _____

Possible Answer:

a. Prefixes are the words or letters added before units.
b. 1 milli second = 10^{-3} second or 0.01 second
   1 meter = 10^{2} cm or 100 cm
c. 10^{-6} gm = micro gram
   10^{-3} gm = milli gram
   10^{3} gm = kilo gram

Checking Hints:

Total 6 Marks
1 mark for the definition
1 mark for each conversion (2 required)
1 mark for each unit (3 required)

Q7: **6 Marks**

Write THREE disadvantages of thermal expansion in solids i.e bridges, roads and railway tracks. Suggest ONE way in each case to overcome the problem.

Possible Answer:

i. Bridges are made of steel. Girders expand in summer and bend.
Suggestion: One end is kept fixed and other end rest on roller.

ii. Road, crack with change in temperature due to expansion and contraction.
Suggestion: Keeping space between patches.

iii. Rail tracks bend in summer due to expansion of metal.
Suggestion: Gaps should be left between joints of plates.

Checking Hints:

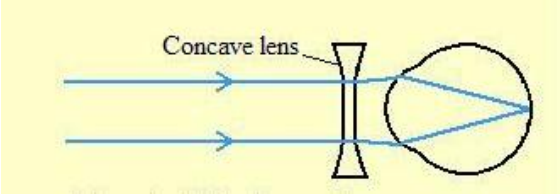
Total 6 Marks
1 mark for each disadvantage (3 required)
1 mark for each solution/ suggestion (3 required)

Q8: **6 Marks**

a. What defect occurs in the eye of a person in case of short-sightedness?
b. How can short sightedness be corrected? Elaborate with diagram.

Possible Answer:

a. When the **lens of the eye becomes thick** then focal length is reduced and parallel **rays are focused in front of retina**, as a result, person **cannot see distant objects clearly**.
b. By wearing glasses having **concave lens** of suitable focal length the problem of shortsightedness can be corrected.



Checking Hints:

Total 6 Marks
3 marks for writing about the defect (3 key phrases required)
1 mark for use of concave lens
2 marks for diagram (1 for showing concave lens + 1 for converging rays on retina)

Q9: **6 Marks**

a. Name the principle on which the A.C. generator works.
b. Name FOUR parts of a generator.
c. How does an A.C. generator produce current?

Possible Answer:

a) Electromagnetic induction
b) Armature, magnet, slip rings, carbon bushes, rectangular coil
c) When **coil rotates in the magnetic field**, **voltage is produced** which **generates electric current** to the external circuit.

Checking Hints:

Total 6 Marks
1 mark for naming the principle
0.5 mark for each part (4 required)
3 marks for description (3 key phrases required)

Q10: **6 Marks**

State any FOUR benefits caused by the technology of the space exploration. Describe any TWO of them.

Possible Answer:

Archeology, Tsunami tracking, Cordless tools, Vision research, Fire fighting strategy, Active pixel sensor, Global positioning satellites

Description:

i. Fire Fighting Equipment: Apollo technology has been used to produce a **lighter breathing system** for fire-fighters. The new system **weighs about 9 kg and has a mask with greater peripheral vision**.

ii. Fire Fighting Strategy: European Space Agency satellites provide **information on fire locations**. This is being used to **help develop fire fighting strategy**.

iii. Vision Research: Land stat and Skylab technology is **used to check the human eye for refractive error** and cornea **or lens obstruction**.

iv. Global Positioning Satellites: Satellites orbiting the Earth, earth monitoring stations, and navigation receivers **provide accurate positioning for ships, ground vehicles, airplanes** and other portable device use. This technology has **both military and non-military uses**.

v. Cordless Tools: The cordless tool was developed for the **study of moon soil samples**. This cordless technology is now **used in the operating room, building construction, secret places and gardening.**

vi. Active Pixel Sensor: This improved image technology requires **less power, is less expensive and is smaller than previous technology**. It has provided **better images for camcorders, digital cameras, night vision and x-rays.**

vii. Tsunami Tracking: A satellite circling the Earth **receives transmissions from under sea detectors**. It **provides accurate information on tsunami size and strength.**

viii. Archaeology: Space Shuttle radar images **help to locate ancient cities, roads, and ruins**. This **helps pinpoint archaeological areas faster**.

Checking Hints:

Total 6 Marks
0.5 mark for stating each benefit (2 required)
2 marks for the description of each benefit (2 key phrases required in each benefit)