

Full Practice Exam — Set 2

Science · Class 7 · Full Syllabus Practice Exam

TIME 60 minutes	QUESTIONS 50	TOTAL MARKS 60	MAX. SCORE ___ / 60
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Name: _____ Class/Sec: _____ Date: _____

INSTRUCTIONS

- There are **50 questions** in this paper. All questions are compulsory.
- Each question has four options (A), (B), (C) and (D). Exactly **one** option is correct.
- Questions 1–45 carry **1 mark** each. Questions 46–50 (Achievers Section) carry **3 marks** each.
- There is no negative marking. Study every diagram and table carefully.

Section 1 — Logical Reasoning

Q1–Q10 · 1 mark each

- What comes next in the series? 3, 7, 15, 31, 63, ____
 (A) 127 (B) 125
 (C) 128 (D) 120
- Find the **odd one out**: Whale, Shark, Dolphin, Dugong
 (A) Whale (B) Dolphin
 (C) Shark (D) Dugong
- What comes next in the letter series? B, D, G, K, ____
 (A) N (B) O
 (C) P (D) Q
- In a certain code, RIVER is written as 18-9-22-5-18. How is OCEAN written in the same code?
 (A) 14-3-5-1-15 (B) 15-3-4-1-14
 (C) 15-3-5-1-4 (D) 15-3-5-1-14
- Pointing to a photograph, Meena said, 'She is the daughter of my father's only son.' How is the girl in the photograph related to Meena?
 (A) Niece (B) Sister
 (C) Cousin (D) Daughter
- In a row of children, Aman is 7th from the left end and 12th from the right end. How many children are there in the row?
 (A) 17 (B) 18
 (C) 19 (D) 20
- Priya walks 6 km north, then 8 km east. How far is she from her starting point?
 (A) 2 km (B) 10 km
 (C) 14 km (D) 48 km

8. Which of these does **not** belong with the rest?

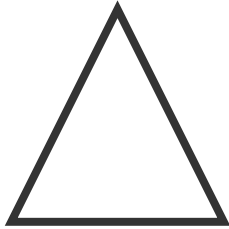
(A) Conduction

(B) Convection

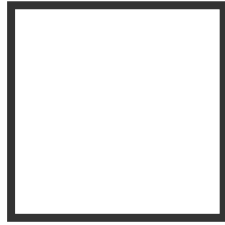
(C) Digestion

(D) Radiation

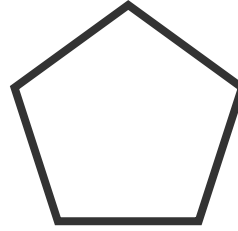
9. Study the figure showing a sequence of shapes with the number of sides marked below each one. Which shape should come next in the sequence?



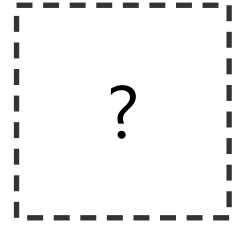
3 sides



4 sides



5 sides



? sides

A sequence of shapes with 3, 4 and 5 sides

(A) Octagon (8 sides)

(B) Circle (0 sides)

(C) Rectangle (4 sides)

(D) Hexagon (6 sides)

10. If today is Thursday, what day will it be after 59 days?

(A) Sunday

(B) Saturday

(C) Monday

(D) Friday

Section 2 — Science

Q11–Q45 · 1 mark each

11. The process by which green plants prepare their own food using sunlight, water and carbon dioxide is called _____.

(A) Respiration

(B) Photosynthesis

(C) Transpiration

(D) Excretion

12. The green pigment present in leaves that traps sunlight for photosynthesis is called _____.

(A) Haemoglobin

(B) Melanin

(C) Chlorophyll

(D) Chitin

13. Pitcher plants grow in marshy, nitrogen-poor soil and trap and digest insects mainly to obtain _____.

(A) Water

(B) Sunlight

(C) Carbon dioxide

(D) Nitrogen

14. The loss of water in the form of vapour through the stomata of leaves is called _____.

(A) Transpiration

(B) Photosynthesis

(C) Absorption

(D) Respiration

15. Thin, hair-like extensions of root cells that absorb water and dissolved minerals from the soil are called _____.

(A) Stem

(B) Root hairs

(C) Leaf

(D) Flower

16. The plant tissue that carries water and minerals upward from the roots to the leaves is called _____.

(A) Phloem

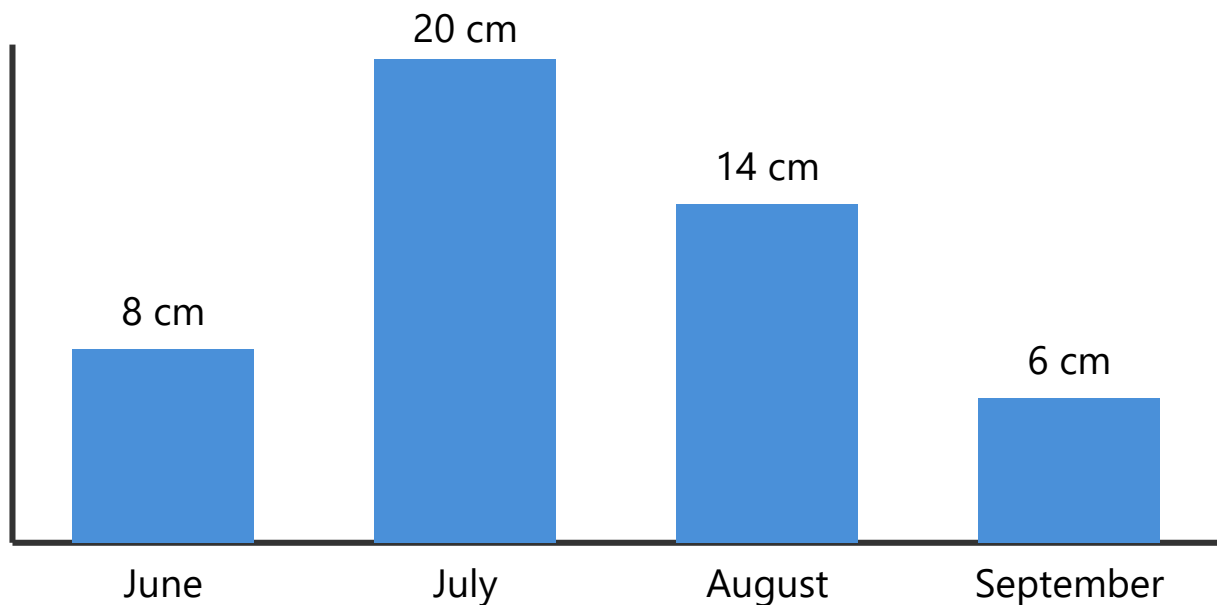
(B) Cambium

(C) Xylem

(D) Epidermis

17. Food made in the leaves is carried to other parts of the plant through _____.
(A) Xylem (B) Cortex
(C) Pith (D) Phloem
18. During heavy exercise, a person's breathing rate increases mainly to supply extra _____ to the muscles.
(A) Oxygen (B) Carbon dioxide
(C) Glucose (D) Water
19. When muscle cells do not get enough oxygen during vigorous exercise, they respire anaerobically and build up _____, which causes cramps.
(A) Carbon dioxide only (B) Lactic acid
(C) Ethanol (D) Oxygen
20. Earthworms have no lungs or gills. They exchange gases mainly through their _____.
(A) Lungs (B) Gills
(C) Moist skin (D) Tracheae
21. Insects such as grasshoppers take in air through tiny openings on the sides of their body called _____.
(A) Alveoli (B) Gills
(C) Stomata (D) Spiracles
22. The muscular organ that pumps blood throughout the human body is the _____.
(A) Heart (B) Kidney
(C) Lungs (D) Liver
23. The pale, watery fluid part of blood, in which blood cells and platelets float, is called _____.
(A) Serum (B) Plasma
(C) Lymph (D) Platelets
24. As water evaporates from the leaves, it creates an upward suction in the xylem called _____, which helps draw water up from the roots.
(A) Root pressure only (B) Gravity
(C) Transpiration pull (D) Photosynthesis
25. The part of a flower, made up of a filament and anther, that produces pollen grains is the _____.
(A) Pistil (B) Sepal
(C) Petal (D) Stamen
26. The female reproductive part of a flower, consisting of the stigma, style and ovary, is the _____.
(A) Pistil (B) Anther
(C) Filament (D) Stamen
27. The transfer of pollen grains from the anther to the stigma of a flower is called _____.
(A) Fertilisation (B) Pollination
(C) Germination (D) Respiration
28. Seeds that are dispersed by wind, such as those of the maple tree, usually have _____.
(A) Hooks (B) Juicy fruits
(C) Wings or hairy structures (D) Heavy shells

29. The average pattern of weather conditions of a region, observed over many years, is called its _____.
(A) Weather (B) Season
(C) Forecast (D) Climate
30. A thick coat of fur and a layer of fat under the skin help the polar bear survive in _____.
(A) Cold polar regions (B) Tropical rainforests
(C) Grasslands (D) Hot desert regions
31. Camels can survive long periods without drinking water mainly because fat is stored in their _____.
(A) Liver (B) Hump
(C) Legs (D) Ears
32. Soil that forms and remains at the same place where the parent rock was weathered is called _____ soil.
(A) Imported (B) Transported
(C) Residual (D) Alluvial
33. The bar chart shows the average rainfall (in cm) recorded in a hill town over four months. Which month received the highest rainfall?

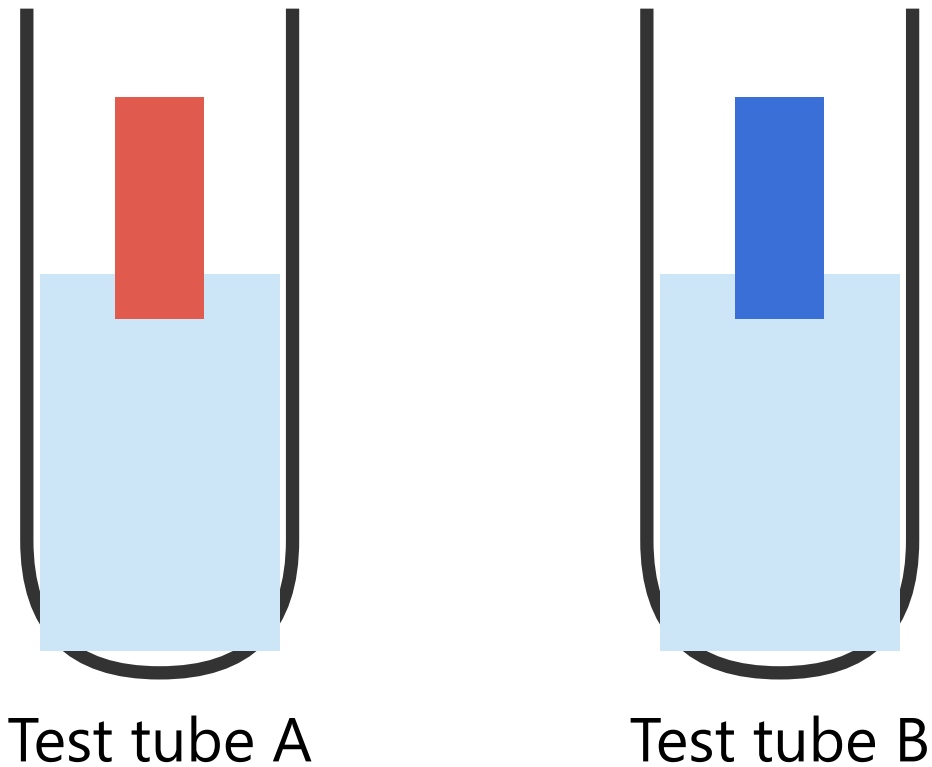


Average monthly rainfall (cm) in a hill town

- (A) June (B) August
(C) September (D) July
34. Rusting occurs when iron reacts slowly, in the presence of moisture, with _____ in the air.
(A) Oxygen (B) Carbon dioxide
(C) Hydrogen (D) Nitrogen
35. Which of the following is an example of a **physical** change?
(A) Burning of paper (B) Melting of ice
(C) Rusting of iron (D) Digestion of food

36. Which of these materials would be the safest choice for the handle of a cooking pan, to avoid burns?
- (A) Copper (B) Aluminium
(C) Plastic (heat-resistant material) (D) Iron
37. On a sunny afternoon, a metal staircase railing feels much hotter to touch than a wooden railing beside it, even though both are at the same temperature. Why?
- (A) Metal is always hotter than wood (B) Wood reflects sunlight
(C) Metal absorbs no heat at all (D) Metal conducts heat to the hand faster than wood
38. A ray of light bends as it passes from air into water. This bending of light at the boundary of two media is called _____.
- (A) Refraction (B) Dispersion
(C) Diffusion (D) Reflection
39. White light splits into seven colours when it passes through a glass prism. This splitting of light is called _____.
- (A) Reflection (B) Dispersion
(C) Refraction (D) Absorption
40. A shopkeeper wants a single mirror at the corner of the shop that lets her see customers over the widest possible area. Which mirror should she choose, and why?
- (A) Plane mirror, because it never distorts images (B) Concave mirror, because it magnifies distant objects
(C) Convex mirror, because it gives a wider field of view (D) Cylindrical mirror, because it forms real images

41. The figure shows two test tubes after a litmus test. Based on the colours shown, what can be said about solutions A and B?



The litmus paper strip in test tube A (originally blue) has turned red; the strip in test tube B (originally red) has turned blue.

- (A) Both are acidic
(B) Both are neutral
(C) Solution A is basic and Solution B is acidic
(D) Solution A is acidic and Solution B is basic
42. Common salt used in our homes is obtained on a large scale by evaporating _____.
(A) Sea water
(B) Marble
(C) Coal
(D) Limestone
43. A student mixes vinegar (an acid) with baking soda (a base) in a flask fitted with a delivery tube leading into lime water. The lime water turns milky. Which gas caused this?
(A) Oxygen
(B) Carbon dioxide
(C) Hydrogen
(D) Nitrogen
44. Sandy soil allows water to drain through it quickly mainly because it is made of _____.
(A) Very fine, tightly packed particles
(B) No air spaces at all
(C) Large particles with big air spaces between them
(D) A higher humus content than clayey soil
45. A farmer notices that a bare, sloping field loses its topsoil quickly after rain, while an adjoining field with grass cover does not. What does this mainly show?
(A) More irrigation is needed on the bare field
(B) Adding more fertiliser would help
(C) Removing all vegetation improves the soil
(D) Plant cover reduces soil erosion by running water

46. Consider the following statements about transportation in plants.

- (i) Xylem transports water and minerals from the roots to the leaves.
- (ii) Phloem transports water only and never carries food.
- (iii) Guard cells control the opening and closing of stomata, through which plants lose water vapour.

Which of the statements is/are correct?

- (A) (i) only
- (B) (ii) only
- (C) (ii) and (iii) only
- (D) (i) and (iii) only

47. Assertion (A): A woollen sweater keeps a person warmer than a cotton shirt of the same thickness in cold weather.

Reason (R): Wool fibres trap pockets of air, and air is a poor conductor of heat.

- (A) Both A and R are true, and R is the correct explanation of A.
- (B) Both A and R are true, but R is not the correct explanation of A.
- (C) A is true, but R is false.
- (D) A is false, but R is true.

48. Study the figure showing Column I and Column II. Match each structure in Column I with its correct function in Column II.

Column I	Column II
P. Alveoli	1. Absorption of digested food
Q. Xylem	2. Gaseous exchange in the lungs
R. Stomata	3. Transport of water in plants
S. Villi	4. Loss of water vapour from leaves

- (A) P-2, Q-3, R-4, S-1
- (B) P-1, Q-2, R-3, S-4
- (C) P-3, Q-2, R-1, S-4
- (D) P-2, Q-4, R-3, S-1

49. Equal volumes of water are placed in two identical open beakers, X and Y. Beaker X is kept in direct sunlight and beaker Y in a shaded room, both for the same duration. After two hours, beaker X shows a much bigger drop in water level than beaker Y. What does this observation best show?

- (A) Sunlight makes water heavier
- (B) Evaporation increases with higher temperature
- (C) Water level changes randomly, for no particular reason
- (D) Shade increases the rate of evaporation

50. A student tests four unknown solutions, P, Q, R and S, using strips of litmus paper.

Solution P turns blue litmus red, but has no effect on red litmus.

Solution Q turns red litmus blue, but has no effect on blue litmus.

Solution R has no effect on either red or blue litmus.

Solution S turns both strips a faint, inconsistent shade with no clear colour change.

Based only on the results that give a clear, reliable colour change, which solution is definitely basic?

- (A) P
- (B) Q
- (C) R
- (D) S

Answer Key

1	A	2	C	3	C	4	D	5	A
6	B	7	B	8	C	9	D	10	A
11	B	12	C	13	D	14	A	15	B
16	C	17	D	18	A	19	B	20	C
21	D	22	A	23	B	24	C	25	D
26	A	27	B	28	C	29	D	30	A
31	B	32	C	33	D	34	A	35	B
36	C	37	D	38	A	39	B	40	C
41	D	42	A	43	B	44	C	45	D
46	D	47	A	48	A	49	B	50	B

Solutions

1. Answer: (A) 127

Each term is double the previous term plus 1: $3 \times 2 + 1 = 7$, $7 \times 2 + 1 = 15$, $15 \times 2 + 1 = 31$, $31 \times 2 + 1 = 63$, $63 \times 2 + 1 = \mathbf{127}$.

2. Answer: (C) Shark

Whale, dolphin and dugong are aquatic mammals that breathe using lungs. A **shark** is a fish that breathes using gills, so it does not belong with the rest.

3. Answer: (C) P

The gap between letters increases by one each time: B(+2)D(+3)G(+4)K(+5)?. Counting 5 letters after K (L,M,N,O,P) gives **P**.

4. Answer: (D) 15-3-5-1-14

Each letter is replaced by its position in the alphabet: O=15, C=3, E=5, A=1, N=14, giving **15-3-5-1-14**.

5. Answer: (A) Niece

Since Meena is female, her father's only son must be her brother. The daughter of Meena's brother is Meena's **niece**.

6. Answer: (B) 18

Total children = $7 + 12 - 1 = \mathbf{18}$, since Aman is counted once in both positions.

7. Answer: (B) 10 km

Distance = $\sqrt{6^2 + 8^2} = \sqrt{36 + 64} = \sqrt{100} = \mathbf{10 \text{ km}}$.

8. Answer: (C) Digestion

Conduction, convection and radiation are the three modes of heat transfer. **Digestion** is a life process, not a mode of heat transfer, so it does not belong with the rest.

9. Answer: (D) Hexagon (6 sides)

The number of sides increases by one at each step: 3, 4, 5. The next shape in the sequence should have 6 sides, which is a **hexagon**.

10. Answer: (A) Sunday

$59 = 8$ complete weeks (56 days) + 3 extra days. Three days after Thursday: Friday, Saturday, **Sunday**.

11. Answer: (B) Photosynthesis

Green plants make their own food from sunlight, water and carbon dioxide through **photosynthesis**.

12. Answer: (C) Chlorophyll

Chlorophyll is the green pigment in leaves that absorbs sunlight for photosynthesis.

13. Answer: (D) Nitrogen

Insectivorous plants grow where the soil lacks nitrogen, so digesting trapped insects supplies the **nitrogen** they cannot get from the soil.

14. Answer: (A) Transpiration

Loss of water vapour through the stomata of leaves is called **transpiration**.

15. Answer: (B) Root hairs

Root hairs are thin extensions of root epidermal cells that absorb water and minerals from the soil.

16. Answer: (C) Xylem

Xylem tissue carries water and minerals from the roots up to the leaves.

17. Answer: (D) Phloem

Food made in the leaves is transported to the rest of the plant through **phloem** tissue.

18. Answer: (A) Oxygen

Muscles need more energy during heavy exercise, so breathing speeds up to supply extra **oxygen** for respiration.

19. Answer: (B) Lactic acid

Anaerobic respiration in oxygen-starved muscle cells produces **lactic acid**, which builds up and causes cramps.

20. Answer: (C) Moist skin

Oxygen dissolves in the moisture on an earthworm's body surface and diffuses in, so earthworms breathe through their **moist skin**.

21. Answer: (D) Spiracles

Air enters an insect's body through small openings called **spiracles**, which connect to a network of tracheae.

22. Answer: (A) Heart

The **heart** is the muscular pump that circulates blood through the body.

23. Answer: (B) Plasma

The watery fluid of blood that carries the blood cells is called **plasma**.

24. Answer: (C) Transpiration pull

Evaporation of water from the leaves creates a pulling force called **transpiration pull**, which draws water upward through the xylem.

25. Answer: (D) Stamen

The **stamen**, consisting of the filament and anther, is the male part of the flower that produces pollen.

26. Answer: (A) Pistil

The **pistil**, made up of the stigma, style and ovary, is the female part of the flower.

27. Answer: (B) Pollination

The transfer of pollen from the anther to the stigma is called **pollination**.

28. Answer: (C) Wings or hairy structures

Wind-dispersed seeds such as those of the maple usually have **wings or hairy structures** that let them float and travel in air.

29. Answer: (D) Climate

The long-term average weather pattern of a region is called its **climate**.

30. Answer: (A) Cold polar regions

Thick fur and body fat trap heat and reduce heat loss, helping the polar bear survive in **cold polar regions**.

31. Answer: (B) Hump

Fat stored in the camel's **hump** can be broken down to release energy and water when needed.

32. Answer: (C) Residual

Soil that stays where the parent rock was broken down, without being carried away, is called **residual** soil.

33. Answer: (D) July

Reading the bar chart, July has the tallest bar at 20 cm, compared with June (8 cm), August (14 cm) and September (6 cm), so **July** received the highest rainfall.

34. Answer: (A) Oxygen

Rusting is a slow chemical reaction between iron and **oxygen** in the presence of moisture, forming hydrated iron oxide.

35. Answer: (B) Melting of ice

Melting of ice only changes water from solid to liquid; no new substance is formed, so it is a **physical** change.

36. Answer: (C) Plastic (heat-resistant material)

Copper, aluminium and iron are good conductors and would get hot quickly. A **heat-resistant plastic** is a poor conductor, so it stays safe to hold.

37. Answer: (D) Metal conducts heat to the hand faster than wood

Both railings are at the same temperature, but metal is a much better conductor than wood, so it **transfers heat to the hand faster**, making it feel hotter.

38. Answer: (A) Refraction

The bending of light as it passes from one transparent medium into another is called **refraction**.

39. Answer: (B) Dispersion

The splitting of white light into its seven component colours by a prism is called **dispersion**.

40. Answer: (C) Convex mirror, because it gives a wider field of view

A convex mirror forms a smaller, upright image and covers a much larger area than a plane mirror of the same size, so a **convex mirror** is best for viewing a wide area.

41. Answer: (D) Solution A is acidic and Solution B is basic

The blue litmus strip turning red shows that solution A is acidic, and the red litmus strip turning blue shows that solution B is basic, as seen from the colours of the strips in the figure.

42. Answer: (A) Sea water

Common salt is obtained on a large scale by evaporating **sea water** in shallow ponds.

43. Answer: (B) Carbon dioxide

Vinegar reacting with baking soda releases **carbon dioxide** gas, which turns lime water milky.

44. Answer: (C) Large particles with big air spaces between them

Sandy soil is made of **large particles with big air spaces between them**, so water passes through quickly instead of being held back.

45. Answer: (D) Plant cover reduces soil erosion by running water

The bare field loses topsoil quickly while the grass-covered field does not, showing that **plant cover reduces soil erosion** caused by running water.

46. Answer: (D) (i) and (iii) only

Statement (i) is correct, since xylem carries water and minerals upward. Statement (ii) is incorrect, since phloem transports food, mainly sugars, not water. Statement (iii) is correct, since guard cells open and close the stomata. The correct statements are therefore **(i) and (iii) only**.

47. Answer: (A) Both A and R are true, and R is the correct explanation of A.

Wool traps air between its fibres, and trapped air conducts heat poorly, which slows the loss of body heat. This makes both the assertion and the reason true, with the reason correctly explaining the assertion.

48. Answer: (A) P-2, Q-3, R-4, S-1

Alveoli carry out gaseous exchange in the lungs, xylem transports water in plants, stomata cause loss of water vapour from leaves through transpiration, and villi absorb digested food in the small intestine. This gives the matching Alveoli with gaseous exchange, Xylem with water transport, Stomata with loss of water vapour, and Villi with absorption of digested food.

49. Answer: (B) Evaporation increases with higher temperature

The only difference between the two setups is exposure to sunlight, which raises temperature. Since the sunlit beaker loses more water, this shows that **evaporation increases with higher temperature**.

50. Answer: (B) Q

A solution that turns red litmus blue is basic. Solution Q shows this clear colour change, while solution P is acidic, solution R is neutral, and solution S gives no reliable result. Solution Q is therefore definitely basic.