

Instruction for MCQ tagged questions

Sample Question

6. Which of the following are prime numbers ?

MCQ : +5, -0

- (A) 2
- (B) 4
- (C) 7
- (D) 9

All MCQ questions are tagged as shown.

The correct answers are (A) and (C), then you should darken the circles for options (A) and (C) on the OMR sheet.

✓ Correct only when both (A) and (C) circles are dark	✗ Correct only when both (A) and (C) circles are dark	✗ Incorrect if only circle (C) is dark.
5 (A) (B) (C) (D)	5 (A) (B) (C) (D)	5 (A) (B) (C) (D)
6 (A) (B) (C) (D)	6 (A) (B) (C) (D)	6 (A) (B) (C) (D)
7 (A) (B) (C) (D)	7 (A) (B) (C) (D)	7 (A) (B) (C) (D)
8 (A) (B) (C) (D)	8 (A) (B) (C) (D)	8 (A) (B) (C) (D)

PART I : PHYSICS

This section contains **10 Questions (Q : 01 to Q : 10)**. Each question has four choices **(A), (B), (C) and (D)**.

1. A bar magnet is cut exactly at $\frac{1}{3}$ rd of its length from one end into two pieces A (short) and B (long). Which statement is correct about their pole strengths?

SCQ : +3, -1

- (A) A has greater pole strength than B
 (B) B has greater pole strength than A
 (C) Both have equal pole strength but different magnetic moments
 (D) Both have equal magnetic moment and equal pole strength

2. A steel needle just sinks in water, yet it is used as a "floating magnet" in a compass bowl when placed on a leaf. The primary reason it floats is:

SCQ : +3, -1

- (A) Magnetism reduces weight
 (B) Surface tension supports the needle if load is spread by the leaf
 (C) Water becomes diamagnetic near a magnet
 (D) Earth's field holds it up

3. A runner on a straight track completes the first 50 m in 10 seconds and the next 50 m in 8 seconds. What is the best description of the runner's motion?

SCQ : +3, -1

- (A) Uniform motion
 (B) Periodic motion
 (C) Rectilinear motion with constant velocity
 (D) Non-uniform motion

4. A 50 cm ruler has its zero end chipped off. You measure a pencil by placing its left end at the 3.2 cm mark and right end at the 17.9 cm mark. Length is:

SCQ : +3, -1

- (A) 21.1 cm
 (B) 14.7 cm
 (C) 13.7 cm
 (D) 20.9 cm

***** B06161125 *****

Space for rough work

B06161125

5. Which of the following statement/s is/ are **True(T)** or **False(F)** ?

T/F SCQ : +4, -1

- (i) Heating a magnet strongly and allowing it to cool randomly can reduce its magnetism.
- (ii) Stroking a steel strip with alternate poles in random order is an efficient way to magnetise it.
- (iii) Earth's magnetic field is strongest at the magnetic equator.

Code :

(i) (ii) (iii)

- (A) F F T
- (B) T T T
- (C) T F F
- (D) T F T

6. Match **Column - I** with **Column - II** and select the correct answer using the codes given below.

MTC SCQ : +4, -1

Column - I	Column - II
P. Odometer reading of a car	1. Repeated periodic motion
Q. Simple pendulum time-period	2. Non-uniform motion indicator
R. Speedometer needle	3. Distance travelled
S. A car driving in traffic	4. Instantaneous speed

Code :

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

Paragraph for Questions 07 & 08

A scientist designed an experiment to compare the motion of three different objects - a pendulum bob, a rolling ball, and a moving car toy. The pendulum bob completed one swing (to and fro) in exactly 2 seconds, while the ball rolled down a sloping surface covering unequal distances in equal intervals of time. The car toy moved on a straight, smooth surface, covering equal distances in equal intervals of time. When the scientist measured the distances and time using a stopwatch and measuring tape, he found that only one of the three showed uniform motion, another showed non-uniform motion, and the third displayed periodic motion.

***** B06161125 *****

Space for rough work

B06161125

7. Which of the following correctly matches each type of motion with the object?

SCQ : +3, -1

- (A) Pendulum - Non-uniform, Ball - Periodic, Car - Uniform
- (B) Pendulum - Periodic, Ball - Non-uniform, Car - Uniform
- (C) Pendulum - Uniform, Ball - Periodic, Car - Non-uniform
- (D) Pendulum - Periodic, Ball - Uniform, Car - Non-uniform

8. If the time period of the pendulum is increased, which of the following changes must have been made?

SCQ : +3, -1

- (A) The length of the pendulum string was decreased.
- (B) The pendulum bob was made heavier.
- (C) The length of the pendulum string was increased.
- (D) The pendulum was made to swing faster.

9. Which of the following statements is/ are **incorrect** about uniform motion of a body?

MCQ : +5, -0

- (A) Average speed over any equal time interval is same
- (B) Distance-time graph is a straight line through origin
- (C) Speedometer needle must be perfectly still at one mark
- (D) Odometer increases non-linearly with time

10. Which of the following statements are correct about magnets and magnetic field properties?

MCQ : +5, -0

- (A) Soft iron is preferred for electromagnet cores
- (B) Like poles can attract in some cases
- (C) Magnetic field lines never cross
- (D) A freely suspended magnet aligns roughly north-south

***** B06161125 *****

Space for rough work

B06161125

PART II : CHEMISTRY

This section contains **10 Questions (Q : 11 to Q : 20)**. Each question has four choices **(A), (B), (C) and (D)**.

11. The method used to separate a mixture of mustard seeds and wheat flour is:

SCQ : +3, -1

- (A) Sieving (B) Winnowing
(C) Handpicking (D) Threshing

12. A student is given four objects: a plastic scale, a steel spoon, a wooden ruler, and a glass rod. Which property can be used to group the steel spoon and the glass rod together?

SCQ : +3, -1

- (A) Magnetic property
(B) Solubility in water
(C) Hardness
(D) Electrical conductivity

13. Which word means "able to be broken easily"?

SCQ : +3, -1

- (A) Brittle (B) Hard
(C) Elastic (D) Tough

14. An object is found to float in water but sinks in kerosene. This implies that:

SCQ : +3, -1

- (A) The density of the object is less than water but more than kerosene.
(B) The density of the object is more than water but less than kerosene.
(C) The density of water is less than kerosene.
(D) Kerosene is a better solvent than water.

15. Which of the following statement/s is/ are **True(T)** or **False(F)** ?

T/F SCQ : +4, -1

- (i) Rubber is a non-metal and a good electrical insulator.
(ii) Metals are generally hard and can be hammered without breaking.
(iii) All metals are magnetic.

Code :

(i) (ii) (iii)

- (A) F F T
(B) T F T
(C) T T F
(D) T F F

16. Match **Column - I** with **Column - II** and select the correct answer using the codes given below.

MTC SCQ : +4, -1

Column - I	Column - II
P. Use of sieve in a flour mill	1. To separate heavier and lighter substances
Q. Winnowing by farmers	2. To separate large and small particles
R. Using magnet in waste separation	3. To remove iron materials
S. Evaporation of salt solution	4. To get dissolve solid back

Space for rough work

***** B06161125 *****

B06161125

Code :

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

Paragraph for Questions 17 & 18

A chef is preparing a fresh fruit salad. She peels and chops various fruits. Later, she realizes she has accidentally included some rotten pieces. She also notices that the fruit has become too watery after washing. She needs to serve a dry and fresh salad."

- 17.** To remove the excess water from the washed fruit, which method would be most suitable?

SCQ : +3, -1

- (A) Winnowing
- (B) Sieving
- (C) Decantation
- (D) Evaporation

- 18.** Why did the heavier particles settle at the bottom?

SCQ : +3, -1

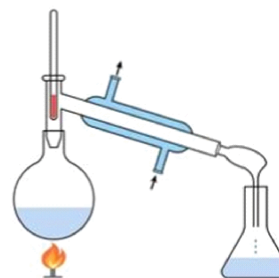
- (A) Due to magnetic force
- (B) Because of sieving
- (C) Due to gravity
- (D) Because they float

- 19.** What is the primary reason plastics are grouped separately from metals?

MCQ : +5, -0

- (A) Plastics conduct electricity
- (B) Plastics are non- conductors of heat
- (C) Plastics are non-metallic and poor conductors of electricity
- (D) Plastics are not element.

- 20.** What is the main principle behind the process?



MCQ : +5, -0

- (A) Differences in density
- (B) Liquids are miscible
- (C) Differences in boiling points
- (D) Differences in melting points

Space for rough work

***** B06161125 *****

B06161125

PART III : BIOLOGY

This section contains **10 Questions (Q : 21 to Q : 30)**. Each question has four choices **(A), (B), (C) and (D)**.

21. Which of the following statements does not hold true for the given plants?



SCQ : +3, -1

- (A) Roots are either absent or very poorly developed.
- (B) Stomata are present only on the upper surface of leaves to facilitate gaseous exchange.
- (C) Body tissue has numerous air spaces.
- (D) Leaves either ribbon-like or highly divided to prevent them from getting torn.

22. The surroundings where organisms live____, which help living things to survive in their surrounding called____. There are some changes that can happen in an organism over a short period of time to help them adjust to the changes in their surroundings. These changes are called_____.

SCQ : +3, -1

- (A) habitat, acclimatisation, adaptations
- (B) terrestrial habitat, acclimatisation, habit
- (C) habitat, adaptations, acclimatisation
- (D) habit, adaptations, acclimatisations

23. (i) are the plants with hard and brown stems, with branches arising near the base of the stem, e.g., (ii) and (iii) .

(i), (ii) and (iii), respectively are-

SCQ : +3, -1

- (A) herbs, mint and tomato
- (B) shrubs, lemon and rose
- (C) climbers, money plant and pea
- (D) trees, neem and banyan

24. Which of the following are rich sources of vitamin B12?

SCQ : +3, -1

- (A) Groundnut oil and sunflower oil
- (B) Cod-liver oil and butter
- (C) Fish, meat and eggs
- (D) Plant proteins

Space for rough work

***** B06161125 *****

B06161125

25. Which of the following statement/s is/ are **True(T)** or **False(F)** ?

T/F SCQ : +4, -1

- (i) In reticulate venation, veins are arranged in the form of a network.
- (ii) A water lily is a submerged aquatic plant.
- (iii) Reticulate venation is present in the leaves of Basil, Rose and China rose.

Code :

(i) (ii) (iii)

- (A) F F T
- (B) T F T
- (C) T T F
- (D) F F F

26. Match **Column - I** with **Column - II** and select the correct answer using the codes given below.

MTC SCQ : +4, -1

Column - I	Column - II
P. Vitamin B ₁ deficiency	1. Constipation
Q. Condition caused by excess body fats	2. Beri-Beri
R. Condition caused by deficiency of roughage	3. Obesity
S. Excess loss of water from the body	4. Dehydration

Code :

P Q R S

- (A) 1 2 3 4
- (B) 4 3 2 1
- (C) 3 1 4 2
- (D) 2 3 1 4

Paragraph for Questions 27 & 28

X and **Y** are two different categories of energy giving foods. **X** is often referred to as an energy supplier whereas **Y** is called an energy bank. **Y** provides twice the amount of energy than that supplied by **X**.

27. Which of the following options identifies the sources of food rich in **X** and **Y** respectively ?

SCQ : +3, -1

- (A) X-Wheat, Y-Maize
- (B) X-Almond, Y-Sweet corn
- (C) X-Coconut oil, Y-Kidney bean
- (D) X-Rice, Y-Butter

28. Select the option that correctly identifies Y obtained from plant and animal sources respectively.

SCQ : +3, -1

- (A) Cheese and mustard product
- (B) Groundnut oil and ghee
- (C) Butter and cod liver oil
- (D) Sunflower oil and coconut oil

Space for rough work

***** B06161125 *****

B06161125

29. Which of the following statements is/are correct for the given food item?



Kheer

MCQ : +5, -0

- (A) The ingredients used to prepare this food are obtained from both plant and animal sources.
- (B) The major nutrients in this food are carbohydrates and proteins.
- (C) This food is also a source of vitamin C.
- (D) The ingredient sourced from plants is actually a seed.

30. Which of the following is/are structural adaptation?

MCQ : +5, -0

- (A) Camels have long eyelashes to protect their eyes from dust storms.
- (B) Some animals migrate from less favourable to more favourable places in search of food and to escape harsh weather.
- (C) The stem of the cactus becomes fleshy to store water and also performs photosynthesis.
- (D) Some aquatic plants have reduced root systems and dissected ribbon like leaves.

***** B06161125 *****

Space for rough work

B06161125

PART IV : MATHEMATICS

This section contains **20 Questions (Q : 31 to Q : 50)**. Each question has four choices **(A), (B), (C) and (D)**.

31. If 'x' is negative, then check which of the following is neither negative nor positive.

SCQ : +3, -1

- (A) $(-x) + (-x)$
- (B) $x - (-x)$
- (C) $(-x) + x$
- (D) $-[x - (-x)]$

32. On solving $14\frac{2}{7} \times 2\frac{6}{25} \times 2\frac{1}{2} \times 3\frac{1}{5}$ to its simplified form, we get :

SCQ : +3, -1

- (A) 215
- (B) 235
- (C) 248
- (D) 256

33. In a class test containing 25 questions, 4 marks are given for every correct answer and (-2) marks are given for every incorrect answer. Rahul attempts all the questions but only 12 of his answers are correct. What will be his total score ?

SCQ : +3, -1

- (A) 25
- (B) 24
- (C) 23
- (D) 22

34. A cuboidal tank is 25m long, 12m wide and 6m deep. Find the cost of plastering its walls and bottom at 75 paise per sq. m:

SCQ : +3, -1

- (A) Rs 456
- (B) Rs 458
- (C) Rs 558
- (D) Rs 568

35. If $\frac{37}{13} = 2 + \frac{1}{a + \frac{1}{b + \frac{1}{c}}}$, where a, b, c are

natural numbers, then which of the following are the value of a, b and c respectively ?

SCQ : +3, -1

- (A) 1, 5, 3
- (B) 1, 3, 5
- (C) 1, 5, 2
- (D) 1, 2, 5

36. Find the arithmetic mean and median of the first seven natural numbers.

SCQ : +3, -1

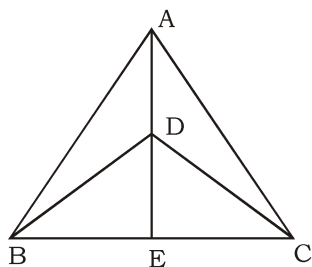
- (A) AM : 4 ; Median : 4
- (B) AM : 4 ; Median : 5
- (C) AM : 5 ; Median : 5
- (D) AM : 5 ; Median : 4

Space for rough work

***** B06161125 *****

B06161125

37. How many number of line segments are in the given figure ?



SCQ : +3, -1

- (A) 9
- (B) 10
- (C) 8
- (D) 7

38. In a scalene triangle, one side exceeds the other two sides by 4cm and 5cm, respectively. The perimeter of the triangle is 36 cm. Find the area of the triangle in cm^2 .

SCQ : +3, -1

- (A) 63
- (B) $9\sqrt{10}$
- (C) $18\sqrt{10}$
- (D) $12\sqrt{21}$

39. Which of the following statement/s is/ are **True(T)** or **False(F)** ?

T/F SCQ : +4, -1

- (i) The successor of $0 \times (-52)$ is $1 \times (-52)$.
- (ii) Integers are closed under division.
- (iii) $(-20) \times (5 - 3) = (-20) \times (-2)$
- (iv) $(-2) + (-9)$ is less than $(-9) - (-2)$.

Code :

(i) (ii) (iii) (iv)

- (A) F F T F
- (B) T F T T
- (C) T T F T
- (D) F F F T

40. Which of the following statement/s is/ are **True(T)** or **False(F)** ?

T/F SCQ : +4, -1

- (i) If all numbers in a data set are the same. The mean, median and mode will also be the same.
- (ii) The median is always one of the number in the data set.
- (iii) In a data set, mode is always less than mean.
- (iv) A single data set can have one mode or more than one mode.

Code :

(i) (ii) (iii) (iv)

- (A) F F T F
- (B) T F F T
- (C) T T F T
- (D) T F T F

Space for rough work

***** B06161125 *****

B06161125

41. Match **Column - I** with **Column - II** and select the correct answer using the codes given below.

MTC SCQ : +4, -1

Column - I	Column - II
------------	-------------

- P.** In a $\triangle ABC$, if $\angle A = 30^\circ$ and $\angle B = 50^\circ$, then $\angle C = ?$
- Q.** In a $\triangle ABC$, BC is extended to D. If $\angle ABC = 90^\circ$ and $\angle BAC = 40^\circ$, then $\angle ACD = ?$
- R.** Greatest measure of angle in right angle triangle is ?
- S.** In a $\triangle ABC$, if $\angle A = x$, $\angle B = 2\angle A$ and $\angle C = 3\angle A$, then $x = ?$

Code :

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

42. Match **Column - I** with **Column - II** and select the correct answer using the codes given below.

MTC SCQ : +4, -1

Column - I	Column - II
------------	-------------

- P.** $4\frac{3}{10} - 1\frac{2}{5} + 8\frac{1}{9}$
- Q.** $0.25 + 9.81 \times 6.4 + 4\frac{1}{9}$
- R.** $6\frac{1}{3} - 4\frac{7}{9} \times 0.8 + 4.32$
- S.** $2\frac{7}{12} + \frac{5}{9} - 0.9345 \times 100$

Code :

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

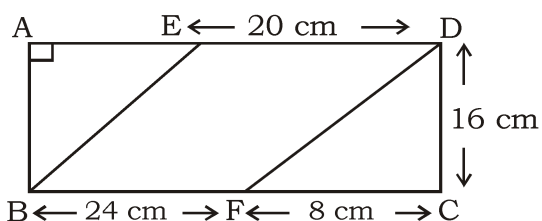
***** B06161125 *****

Space for rough work

B06161125

Paragraph for Questions 43 & 44

Vanshika who is maths teacher of class VI takes a surprise test on ‘Perimeter and Area.’ She draws a figure on black board.



Based on the above figure, answer the following questions.

43. Find the value of AE.

SCQ : +3, -1

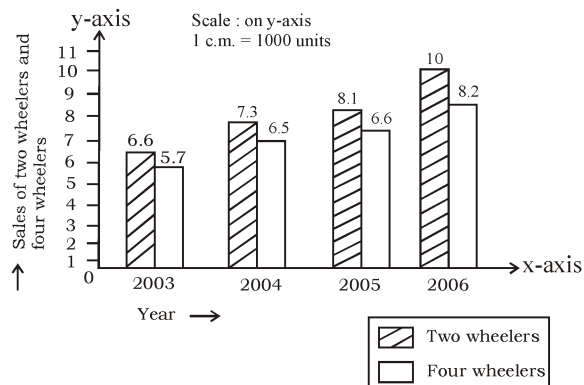
- (A) 8 cm
- (B) 10 cm
- (C) 12 cm
- (D) 14 cm

44. What is the area of $\triangle AEB$?

SCQ : +3, -1

- (A) 96 cm^2
- (B) 97 cm^2
- (C) 98 cm^2
- (D) 99 cm^2

Paragraph for Questions 45 & 46



45. In which year the difference between sales of two wheelers and four wheelers is lowest ?

SCQ : +3, -1

- (A) 2003
- (B) 2004
- (C) 2005
- (D) 2006

46. Find the ratio between number of vehicles sold in the year 2004 and in the year 2006.

SCQ : +3, -1

- (A) 41 : 46
- (B) 69 : 91
- (C) 147 : 182
- (D) 46 : 49

Space for rough work

47. A set of integer number satisfy which property under the multiplication ?

MCQ : +5, -0

- (A) Closed
- (B) Commutative
- (C) Associative
- (D) Distributivity of multiplication over addition

48. Identify the option, where $3\frac{2}{5}$ is equal to :

MCQ : +5, -0

- (A) $3 \times \frac{2}{5}$
- (B) $3 - \frac{2}{5}$
- (C) $3 + \frac{2}{5}$
- (D) $\frac{17}{5}$

49. A pie shows a timeline of daily activities (24 hrs) :

- Sleep = 8 hrs
- School = 6 hrs
- Play = 4 hrs
- Study at home = 6 hrs

Which statements are true ?

MCQ : +5, -0

- (A) Sleep occupies one third of the circle.
- (B) School occupies 90° sector
- (C) Play = $\frac{1}{6}$ of the day
- (D) Study at home = Same time as school.

50. 16% can be expressed as :

MCQ : +5, -0

- (A) Fraction
- (B) Decimal
- (C) Ratio
- (D) Meter

***** B06161125 *****

Space for rough work

B06161125

PART V : LOGICAL REASONING & IQ

This section contains 10 Questions (Q : 51 to Q : 60). Each question has four choices (A), (B), (C) and (D).

51. In a class of 49 student, A is the 17th from the top and B is 11th from the bottom. If C is exactly middle of A and B. How many students are between B and C ?

SCQ : +3, -1

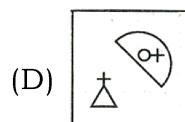
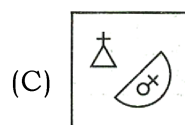
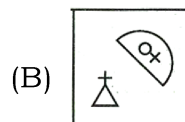
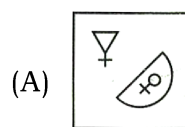
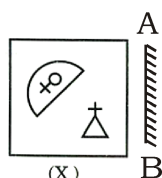
- (A) 9
- (B) 10
- (C) 11
- (D) 12

52. Age of Naren is equal to Naveen as they are twins. Nakul is younger than Naren. Priyanka is younger than Baljeet but older than Naveen. Who is oldest among them ?

SCQ : +3, -1

- (A) Naren
- (B) Baljeet
- (C) Nakul
- (D) Priyanks

53. In this question, choose the correct mirror-image of figure (X), when the mirror is held at AB.



54. In a evening, Ravi travelled 8 km to South, then he turns to right and walked 4 km, then he again turns to his right and moves 8 km forward. How many kilometers away is he from the starting point ?

SCQ : +3, -1

- (A) 7 km
- (B) 6 km
- (C) 4 km
- (D) 8 km

55. In this question, select the water-image of the given combinations :

A 1 M 3 b

SCQ : +3, -1

- (A) **V I M 3 P**
- (B) **V I M 3 P**
- (C) **V I M 3 P**
- (D) **V I M 3 P**

Space for rough work

***** B06161125 *****

B06161125

56. In this question, which of the two signs and number should be interchanged to make the given equations correct ?

$$(6 \div 2) \times 3 = 0$$

SCQ : +3, -1

- (A) \div and \times , 2 and 3
- (B) \times to $-$, 2 and 6
- (C) \div and \times , 2 and 6
- (D) \times to $-$, 2 and 3

57. If R means '+', S means '-', T means ' \times ' U means ' \div ', V means '=', W means '>' and X means '<'. Then which out of four alternatives given in the options is correct ?

SCQ : +3, -1

- (A) 30R6U2W4T3
- (B) 30S6S2X4T3
- (C) 30S6U2U4V3
- (D) 30U6R2W4T3

58. Find missing term in the given number series:

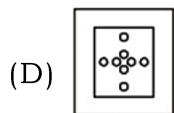
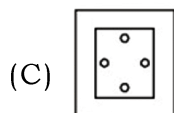
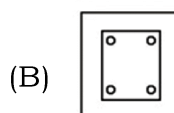
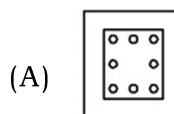
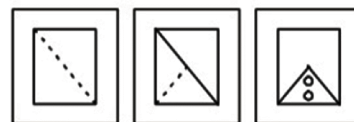
3, 12, 27, 48, 75, ?

SCQ : +3, -1

- (A) 108
- (B) 147
- (C) 183
- (D) 180

59. A square sheet of paper has been folded and punched as shown in the following series of figures. How will it appear when opened ?

SCQ : +3, -1



60. Find missing term in the given alpha-numeric series :

3A, 6C, 11F, 19J, ?

SCQ : +3, -1

- (A) 25P
- (B) 31O
- (C) 25X
- (D) 27P

Space for rough work

***** B06161125 *****

B06161125