

# **Sample Question Bank**

**WRO INDIA NET 2023** 



# **WRO NET Marking Scheme**

WRO India National Entrance Test (NET) is the gateway to World Robot Olympiad India. This is an individual performance level, and the students will be tested grade-wise based on school textbooks. Student who studied in Grade 5 in academic year 2022-23 and is now in Grade 6 for the academic year 2023-24, will sit in the Grade 5 NET test. Please register accordingly for the test.

Students need to complete this exam within 60 minutes.

#### **Exam Pattern Grade 3-5**

S. No.	Subject	No. of Questions	Marks
1	EVS	20 MCQs	40 Marks
2	Mathematics	20 MCQs	40 Marks
3	Aptitude & Reasoning	10 MCQs	20 Marks
_	Total	50 Questions	100 Marks

No negative marking for students giving Grade 3-5 NET exam.

#### **Exam Pattern Grade 6-12**

S. No.	Subject	No. of Questions	Marks		
1	Science	40 MCQs	40 Marks		
2	Mathematics	40 MCQs	40 Marks		
3	Aptitude & Reasoning	20 MCQs	20 Marks		
	Total	100 Questions	100 Marks		

Negative making only applies for students giving Grade 6-12 exam. Negative marking occurs when a candidate marks the wrong answer in the question and 0.25 marks are deducted from the total score of the candidate for every wrong answer. So, for every 4 wrong answers, the candidate loses 1 mark.

Use of calculator is allowed for all the Grades.



# **Section 1: EVS**

Section 1: EVS
Q1. Slow and Steady is my Pace and I always win the race. Who am I?
<ul><li>(a) Frog</li><li>(b) Crocodile</li><li>(c) Rabbit</li><li>(d) Tortoise</li></ul>
Q2. Which of the following fuel is not used for cooking?
<ul><li>(a) Coal</li><li>(b) Petrol</li><li>(c) Wood</li><li>(d) cow Dung</li></ul>
Q3. Which one of the following is a bird but cannot fly?
<ul><li>(a) Bat</li><li>(b) Ostrich</li><li>(c) Parrot</li><li>(d) Sparrow</li></ul>
Q4 is obtained after baking the slabs made of mud in furnace.
<ul><li>(a) Bricks</li><li>(b) Cement</li><li>(c) Iron Rods</li><li>(d) None of these</li></ul>
Section 2: Mathematics
Q1. On the left arm, 2 is subtracted from 30. What can be multiplied with 7 on the right arm to keep it completely balanced?
(a) -2 (b) 4 (c) 2 (d) 9
Q2. If you add 1 bead to tens, what is the new number formed?
(a) 67 (b) 66 (c) 75 (d) 56



Q3. Mahesh was born on 04/03/2017. If Riya was born 2 years later than Mahesh on the same date, then What is the date of birth Riya?
(a) 04/03/2019 (b) 03/03/2021 (c) 04/04/2019 (d) 03/04/2019
Q4. Subtract the amount Rs. 89.90 and Rs. 10.00. What is the answer?
(a) Rs. 99.00 (b) Rs. 70.90 (c) Rs. 79.90 (d) Rs. 99.90
Section 3: Aptitude & Reasoning
Q1. Find odd one out:
<ul><li>(a) River</li><li>(b) Pond</li><li>(c) Lake</li><li>(d) Rain</li></ul>
Q2. Identify the category of the word formed after arranging the following letters: A M C H R
<ul><li>(a) Vegetable</li><li>(b) Fruit</li><li>(c) Month</li><li>(d) Flower</li></ul>
Q3. Which is the odd one out, in the following?
<ul><li>(a) Scissors</li><li>(b) Knife</li><li>(c) Spoon</li><li>(d) Nose Plier</li></ul>
Q4. If P is the brother of Q and L is sister of Q's son, how is P related to L?
(a) Mother (b) Father (c) Uncle (d) Nose Plier



Section 1: EVS
Q1. Those animals that which do not have ears on the outside, and have no hair on their body
<ul><li>(a) Lay Eggs</li><li>(b) Give birth to young ones</li><li>(c) Stay on Ground</li><li>(d) Stay in Water</li></ul>
Q2. Which of the following is correct for spring flowers?
<ul><li>(a) Cornflowers, Delphiniums</li><li>(b) Daffodils, Hyacinths, Tulips</li><li>(c) Daises, Cosmos and Roses</li><li>(d) Christmas rose, witch hazel, Snowdrop flowers</li></ul>
Q3. Which of the following is sweet in taste?
<ul><li>(a) Apple</li><li>(b) Spinach</li><li>(c) Tomato</li><li>(d) Potato</li></ul>
Q4. When does a Litchi tree flower?
<ul><li>(a) January</li><li>(b) February</li><li>(c) March</li><li>(d) December</li></ul>
Section 2: Mathematics
Q1. What is the diameter of the circle if the radius is 1.2 cm?
(a) 2.4 cm (b) 4.8 cm (c) 6.8 cm (d) None of above
Q2. If the shopkeeper sells 5kg sugar, 300g chilly powder, 15kg flour and 3.580g rice. What is the tota weight of all products in grams?
(a) 25,000g (b) 23,800g (c) 23,880g (d) 24,780 g



Q3. If 1 dozen of banana costs ₹40. What will be the cost of 3 dozens of banana?

- (a) 80
- (b) 100
- (c) 120
- (d) 160

Q4. A sports shop has 2300 tennis balls. If 355 balls are sold, how many are left?

- (a) 1944
- (b) 1945
- (c) 1946
- (d) 954

#### Section 3: Aptitude & Reasoning

Q1. Given below are some questions in which two different parts of an image are given. Identify the image after merging the two parts.



(a)



(c)



(b)



(d)



Q2. Reena said, "The woman going on the road is my father's wife". How is the woman related to Reena?

- (a) Sister
- (b) Aunt
- (c) Mother
- (d) Daughter

Q3. Arrange the given words in Alphabetical order and choose the one that comes first?

- (a) Wrap
- (b) Waste
- (c) War
- (d) Wrinkle

Q4. Tanni broke half as many balloons as Ritika. Altogether they broke 18 balloons. Ritika broke 12 balloons. How many balloons did Tanni break?

- (a) 9
- (b) 8
- (c) 10
- (d) 6



Q1. The development of seed into seedling which further develop to plant is called

# **Section 1: EVS**

<ul><li>(a) Conservation</li><li>(b) Seed dispersal</li><li>(c) Germination</li><li>(d) None of these</li></ul>
Q2. Select the correct option regarding natural resources.
<ul><li>(a) They can never be exhausted.</li><li>(b) They are obtained from soil only.</li><li>(c) Non-mineral resources include air and water.</li><li>(d) Some of the natural resources are harmful to us.</li></ul>
Q3. In sound waves do not travel.
<ul><li>(a) Solids</li><li>(b) Liquids</li><li>(c) Gases</li><li>(d) Vacuum</li></ul>
Q4. Movement across rough surfaces causes friction.
(a) More (b) Less (c) No (d) Very Less
Section 2: Mathematics
Q1. What do you mean by natural numbers?
<ul><li>(a) Counting Numbers</li><li>(b) Negative Numbers</li><li>(c) Whole Numbers</li><li>(d) All of these</li></ul>
Q2. When it is 10:30, what kind of angle is formed by the hands of the clock?
(a) Acute (b) Obtuse (c) Right (d) Straight



Q3. Which of the following decimals is equivalent to 0.8%?
(a) 0.008 (b) 0.08 (c) 0.0008 (d) 0.8
Q4. The equality of two ratio is called
<ul><li>(a) Ratio</li><li>(b) Percentage</li><li>(c) Proportion</li><li>(d) Triangle</li></ul>
Section 3: Aptitude & Reasoning
Q1. There are three separate large black boxes, and inside each large box there are two separate smal red boxes, inside each of these small boxes, there is one smaller blue box. How many boxes are there altogether?
(a) 9 (b) 12 (c) 15 (d) 18
Q2. Among the four girls, Sanchi is taller than Trishu and Sidak is taller than Mini. If Trishu is taller than Sidak, then who is the tallest?
<ul><li>(a) Sanchi</li><li>(b) Trishu</li><li>(c) Sidak</li><li>(d) Mini</li></ul>
Q3. Ruhi is moving towards North. She takes right turn. After this, she takes right turn. In which direction, she is moving now?
(a) South (b) North (c) West (d) East
Q4. Which of the following is the odd one?
(a) IV (b) IX (c) VI (d) XV



# **Section 1: Science**

(b) 144 (c) 140 (d) 145

Oction 1. Science
Q1. Which of the following is used to stop the flow of electric current in an electric circuit when it is required?
<ul><li>(a) Cell</li><li>(b) Switch</li><li>(c) Bulb</li><li>(d) All of the above</li></ul>
Q2. Which of the following is not used as a unit for measuring length?
(a) Metre (b) Quintal (c) Millimetre (d) Kilometre
Q3. Speed of light in vacuum is:
(a) 3×10 <sup>8</sup> km/h (b) 3×10 <sup>8</sup> m/s (c) 3×10 <sup>8</sup> m/h (d) None of these
Q4. Magnetic compass
<ul><li>(a) always points in N-S direction</li><li>(b) used to find directions</li><li>(c) is a magnet</li><li>(d) all of the above</li></ul>
Section 2: Mathematics
Q1. What should be subtracted from 0.1 to get 0.03?
(a) 0.7 (b) 0.07 (c) 0.007 (d) None of these
Q2. The cost of 5 Mental ability books is Rs. 90. What will be the cost of 8 such books?
(a) 124



Q3. A number is divisible by both 5 and 12. By which other number will that number be always divisible?
(a) 72 (b) 60 (c) 62 (d) 42
Q4. X and Y together can do a piece of work in 8 days, which X alone can do in 12 days. In how many days can Y do the same work alone?
(a) 12 days (b) 24 days (c) 36 days (d) 16 days
Section 3: Aptitude & Reasoning
Q1. Pole A is 97 cm longer than Pole B. Pole C is twice as long as Pole B. If Pole C is 264 cm long, what is the length of Pole A?
(a) 97cm (b) 2m 31cm (c) 2m 29cm (d) 2m 64cm
Q2. Veena is facing North-East. She turns 90° in the clockwise direction and then 135° in the anticlockwise direction. Which direction is she facing now?
(a) East (b) South (c) North (d) West
Q3. In a certain code, INSTITUTION is written as NOITUTITSNI. How is PERFECTION written in that code?
(a) NOICTEFREP (b) NOITCEFERP (c) NOITCEFRPE (d) NOITCEFREP
Q4. 7 is to 14 as 9 is to
(a) 14 (b) 21 (c) 18 (d) 20



## **Section 1: Science**

Q1.	An instrument	that	automatically	stops	the	current	in	а	circuit	if the	e current	in i	t exceeds	the
spe	cified maximum	limit	.•											

- (a) Positive Terminal
- (b) Switch
- (c) MCB
- (d) ISI
- Q2. Speed of a car is 30 m/s. Find its speed in km/h?
- (a) 110 km/h
- (b) 5.3 km/h
- (c) 108 km/h
- (d) 109 km/h
- Q3. Wind blows from/in:
- (a) Low pressure to high pressure area.
- (b) High pressure to low pressure area.
- (c) Any direction
- (d) No direction
- Q4. Which of the following quantities increases when a liquid at room temperature becomes a gas at its boiling point?
- (a) The average kinetic energy of the molecules
- (b) The molecular size
- (c) The total number of molecules
- (d) All of the above

#### **Section 2: Mathematics**

- Q1. An angle which measures 180° is called?
- (a) Zero Angle
- (b) Right Angle
- (c) Acute Angle
- (d) Straight Angle
- Q2. In a Delhi Office, the working hours are 9:00 am to 5:30 pm and in between 60 minutes are spent for lunch. Find the ratio of time spent on work to the time spent for lunch.
- (a) 8:30
- (b) 2:17
- (c) 6:1
- (d) 15:2



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- (a) 2b
- (b) 2a
- (c) 2a + 2b
- (d) 2a 2b

Q4.  $5^3+5^3+5^3+5^3+5^3$  is equal to

- (a)  $5^4$
- (b) 55555<sup>3</sup>
- (c)  $5^5$
- (d) None of above

# **Section 3: Aptitude & Reasoning**

- Q1. Find the odd one out.
- (a) PQ
- (b) CD
- (c) MN
- (d) DF

Q2. A cat runs 20m towards East, turns right and rurrs-10 m. She then turns right and runs 9m. She again turns left and runs 5 m and then turns left and runs 12 m. Finally she turns left and runs 6 m. Now which direction is the cat facing?

- (a) East
- (b) South
- (c) North
- (d) West

Q3. The angles of a triangle are in the ratio 1:3:5. Find the angles.

- (a) 60°, 40°, 80°
- (b) 20°, 60°, 100°
- (c) 30°, 90°, 50°
- (d) 30°, 60°, 90°

Q4. If TEMPLE is coded as VHQURL, how would you code CHURCH?

- (a) EKYWIO
- (b) EKUWIO
- (c) EKYWIN
- (d) EKYWJO



#### **Section 1: Science**

Q1.	The su	rface area	of the	base of	f a brick	X is100	o cm².	The su	ırface a	area o	f the l	base of	the	brick Y	is
250	cm². E	ach brick	weighs	100 N.	. Which	of the	follow	ing is	correct	if P1	and F	2 are	the p	oressure	35
exe	rted by	the bricks	s X and `	Y respe	ctively?										

- (a) P1 = P2
- (b) P1 < P2
- (c) P1 > P2
- (d) P1 = P2 = 0

Q2. Read the given statements and select the correct option.

Statement 1: While drawing a line on a paper, friction force acts on the paper in the same direction along which the line is drawn on the paper.

Statement 2: Friction always opposes the motion.

- (a) Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.
- (b) Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.
- (c) Statement 1 is true and statement 2 is false.
- (d) Both statements 1 and 2 are false.

Q3. If the temperature increases, then what happens to the frequency of the sound produced by the organ pipe?

- (a) Increases
- (b) Decreases
- (c) Unchanged
- (d) Can't say

Q4. If two plane mirrors are inclined at an angle of 90° to each other, how many images of an object are seen?

- (a) 1
- (b) 2
- (c) 3
- (d) 4

## **Section 2: Mathematics**

Q1. In the set of three consecutive natural numbers, the sum of the last two numbers is equal to the three times the first number. Find the sum of all the three numbers.

- (a) 12
- (b) 14
- (c) 16
- (d) 18

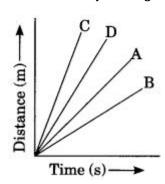


Q2. Simplify: $x^2y^2 \times x^5y^3$
(a) $x^7y^5$ (b) $x^7y^7$ (c) $x^5y^5$ (d) $x^5y^7$
Q3. The number (10 <sup>n</sup> –1) is divisible by 11 for
<ul> <li>(a) n ∈ N</li> <li>(b) Odd values of n</li> <li>(c) Even values of n</li> <li>(d) n is the multiple of 11</li> </ul>
Q4. 72% of 25 students are good at mathematics. How many students are not good at it?
(a) 8 (b) 10 (c) 12 (d) 7
Section 3: Aptitude & Reasoning
Q1. Find the odd one out.
(a) JOT (b) OUT (c) FED (d) DIN
Q2. A boy rode his bicycle North ward, then turned left and rode 1 km and again turned left and rode 2 km. He found himself 1 km west of his starting point. How far did he ride northward initially?
(a) 1 km (b) 2 km (c) 3 km (d) 5 km
Q3. Select the word that completes the pattern: TILL, MANURE, SOW, SPRAY, CARE,?
(a) Crop (b) Fruit (c) Harvest (d) Sale
Q4. 'BF' is related to 'DH' in the same way as 'PT' is related to
(a) SP (b) RV (c) VR (d) SV



## **Section 1: Science**

- Q1. What would be the initial velocity of a body if it starts from rest?
- (a) -1
- (b) 1
- (c) 0
- (d) None of the above
- Q2. The frequency of a source is 20 kHz. The frequencies of the sound waves produced by it in water and air will:
- (a) Be the same as that of the source
- (b) Depend upon the velocity of the waves in these media.
- (c) Depend upon the wavelength of the waves in these media
- (d) Depend upon the density of the media.
- Q3. Two identical balls are at rest side by side at the bottom of a hill. Some time after ball A is kicked up the hill, ball 6 is given a kick up the hill. Ball A is headed downhill when it passes ball B headed up the hill. At the instant when ball A passes ball B, it has the same.
- (a) Position and velocity as ball B
- (b) Position and acceleration as ball B
- (c) Velocity and acceleration as ball B
- (d) Displacement and velocity as ball B
- Q4. Four cars A, B, C and D are moving on a levelled road. Their distance versus time graphs are shown in the adjacent figure. Choose the correct statement.



- (a) Car A is faster than car D.
- (b) Car B is the slowest.
- (c) Car D is faster than car C.
- (d) Car C is the slowest.

#### **Section 2: Mathematics**

Q1. In a sample study of 640 people, it was found that 512 people have a high school certificate. If a person is selected at random, the probability that the person has a high school certificate is:

- (a) 0.5
- (b) 0.6
- (c) 0.7
- (d) 0.8



(a) 48 (b) 56 (c) 52 (d) 60
Q3. If one angle of a triangle is equal to half of the sum of the other two equal angles, then the triangle is:
<ul><li>(a) Isosceles</li><li>(b) Scalene</li><li>(c) Equilateral</li><li>(d) Right angled</li></ul>
Q4. If $(3a+1)^2+(b-1)^2+(2c-3)^2=0$ , then value of $(3a+b+2c)$ is equal to:
(a) 3 (b) -1 (c) 2 (d) 5
Section 3: Aptitude & Reasoning
Q1. Out of four given choices, three are similar in a certain way and one is different. Find out the different one.
(a) HGFED (b) PONML (c) NLKJI (d) UTSRQ
Q2. A man walks 200 m towards East. He turns to right and walks 100 m. He again turns to right and walks 200 m. He then turns to right and again walks 200 m. How far is he from the starting point of the trip?
(a) 50m (b) 100m (c) 200m (d) 700m
Q3. Find odd one out:
(a) EBA (b) XUT (c) TQP (d) JFE
Q4. 'Pointing towards a boy, Meena said, 'He is the son of only son of my grandfather' How is that boy related to Meena? (a) Uncle (b) Cousin (c) Brother (d) Father

Q2. The median of the following data: 36, 46, 32, 42, 33, 52, 50, 48, 56, 60, 53, 95, 75, 80, 70 is



# **Section 1: Science**

Q1. Which of the following elements is a metal?
<ul><li>(a) Nitrogen</li><li>(b) Oxygen</li><li>(c) Sodium</li><li>(d) Sulphur</li></ul>
Q2. Four optical media A, B, C and D have optical densities 1.35, 1.21, 1.58 and 1.002 respectively. In which optical medium will the light travel fastest?
(a) A (b) B (c) C (d) D
Q3. Current flows through a conductor connected across a voltage source. Now the resistance of the conductor is reduced to one fourth to its initial value and connected across the same voltage source. The heating effect in the conductor will become:
<ul><li>(a) Half</li><li>(b) Double</li><li>(c) Four times</li><li>(d) One fourth</li></ul>
Q4. Most of the sources of energy we use represent stored solar energy. Which of the following is not ultimately derived from the Sun's energy?
<ul><li>(a) Wind energy</li><li>(b) Ocean thermal energy</li><li>(c) Geothermal energy</li><li>(d) None of these</li></ul>
Section 2: Mathematics
Q1. If the roots of the quadratic polynomial are equal, and the discriminant $D=b^2-4ac$ , then:
(a) D > 0 (b) D < 0 (c) D >= 0 (d) D = 0
Q2. If an event cannot occur, then its probability is: (a) 1 (b) 3/4 (c) 1/2 (d) 0



Q3. What is the mean of - 7, - 5, 4, 8?

(a) 1 (b) 0 (c) 8 (d) 2
Q4. Graph of a quadratic polynomial is a:
<ul><li>(a) Straight Line</li><li>(b) Circle</li><li>(c) Parabola</li><li>(d) Ellipse</li></ul>
Section 3: Aptitude & Reasoning
Q1. Find odd one out.
(a) DEHG (b) RSVU (c) XYBA (d) LMQP
Q2. The door of a house opens to the South on pushing inside the house. Entering the door there is a room towards the right hand. After entering the room there is a window towards the right hand. What will be the direction of a man's face, if he is standing facing towards the window?
(a) South (b) North (c) East (d) West
Q3. If A, B, C and D are to be seated in a row, but C and D cannot be together Also, B cannot be at the third place from the left, then which of the following must be definitely false?
<ul><li>(a) A is at the second place</li><li>(b) A is at the first place</li><li>(c) A is at the third place</li><li>(d) A is at the fourth place</li></ul>
Q4. D said, "A's father is the only brother of my sister's son". How is A's father related to D?  (a) Aunt (b) Cousin (c) Nephew (d) Inadequate data



#### **Section 1: Science**

- Q1. Which of the following is correct when a person walks on a rough surface:
  - (a) The frictional force exerted by the surface keeps him moving
- (b) The force which the man exerts on the floor keeps him moving
- (c) The reaction of the force which the man exerts on floor keeps him moving
- (d) None of the above
- Q2. The coefficient of restitution e for a perfectly elastic collision is
- (a) 0
- (b) 1
- (c) Infinity
- (d) -1
- Q3. Select the correct statement from the following:
  - (a) The orbital velocity of a satellite increases with the radius of the orbit
- (b) Escape velocity of particle from the surface of earth depends on the speed with which it is fired
- (c) The time period of a satellite does not depend on the radius of the orbit
- (d) The orbital velocity is inversely proportional to the square root of the radius of the orbit
- Q4. A tunnel has been dug through the centre of the earth and a ball is released in it. It will reach the other end of the tunnel after
- (a) 84.6 minutes
- (b) 42.3 minutes
- (c) 1 day
- (d) Will not reach the other end

#### **Section 2: Mathematics**

- Q1. In a college of 300 students, every student reads 5 newspapers, and every newspaper is read by 60 students. The no. of newspaper is:
- (a) At least 30
- (b) At most 20
- (c) Exactly 25
- (d) None of the above
- Q2. Mean of 100 observations is 45. It was later found that two observations 19 and 31 were incorrectly recorded as 91 and 13. The correct mean is:
- (a) 44.00
- (b) 44.46
- (c) 45.00
- (d) 45.54



Q3. The circular wire of diameter 10cm is cut and placed along the circumference of a circle of diameter 1 metre. The angle subtended by the wire at the centre of the circle is equal to
(a) $\Pi/4$ radian (b) $\Pi/3$ radian (c) $\Pi/5$ radian (d) $\Pi/10$ radian
Q4. If the co-ordinates of the middle point of the portion of a line intercepted between coordinate axes (3,2), then the equation of the line will be:
(a) 2x+3y=12 (b) 3x+2y=12 (c) 4x-3y=6 (d) 5x-2y=10
Section 3: Aptitude & Reasoning
Q1. P, Q, R, S and T are sitting around a circular table. R is to the right of P and is second from the left of S. T is not between P and S. Who is second from the left of R?
(a) Q (b) S (c) T (d) None of these
Q2. Nisha starts walking straight towards East She walks a certain distance and then turns her right and walks again. After moving some distance, she again turns right and moves on. Find the direction if her next turn is towards her left.
<ul><li>(a) South</li><li>(b) North</li><li>(c) East</li><li>(d) West</li></ul>
Q3. If in a certain code, LUTE is written as MUTE, FATE is written as GATE, then will BLUE be written in that code?
(a) CLUE (b) GLUE (c) FLUE (d) SLUE
Q4. Rajiv is the brother of Atul. Sonia is the sister of Sunil. Atul is the son of Sonia. How is Rajiv related to Sonia?  (a) Nephew  (b) Son  (c) Brother  (d) Father



#### **Section 1: Science**

- Q1. Plastic rod rubbed with fur and glass rod rubbed with silk:
- (a) repel each other
- (b) mix up with each other
- (c) attract each other
- (d) None of the above
- Q2. Consider a current carrying wire (current I) in the ape of a circle. Note that as the current progresses along the wire, the direction of j (current density) change' in an exact manner, while the current I remain unaffected. The agent that is essentially responsible for is
- (a) source of emf
- (b) electric field produced by charges accumulated on the surface of wire
- (c) the charges just behind a given segment of Wire which push them just the right way by repulsion
- (d) the charges ahead
- Q3. When a charge of 1C moving with velocity 1 m/s normal to a magnetic field experiences a force 1 N, then the magnitude of the magnetic field is
- (a) 1 Gauss
- (b) 1 Tesia
- (c) 1 Orested
- (d) None of above
- Q4. In an n-type silicon, which of the following statement is true:
- (a) Electrons are majority carriers and trivalent atoms are the dopants.
- (b) Electrons are minority carriers and pentavalent atoms are the dopants.
- (c) Holes are minority carriers and pentavalent atoms are the dopants
- (d) Holes are majority carriers and tilvalent atoms are the dopants.

#### **Section 2: Mathematics**

- Q1. In equations  $3x-y\geq 3$  and 4x-y>4:
- (a) Have solution for positive x and y
- (b) Have no solution for positive x and y
- (c) Have solution for all x
- (d) Have solution for all y
- Q2. Mr. 'X' and his wife 'W' both exercised their voting right in general election-2019. Which of the following is true ?
  - (a) both (X, W) and  $(W,X) \in R$
- (b) (X,W)∈R but (W,X)∉R
- (c) both (X, W) and (W,X)∉R
- (d)  $(W,X) \in R$  but  $(X,W) \notin R$



Q3. Three forces of magnitudes 1, 2, 3 dynes meet in a point and act along diagonals of the	ree
adjacent faces of a cube. The resultant force is:	

- (a) 114 dyne
- (b) 6 dyne
- (c) 5 dyne
- (d) None of these
- Q4. Negation of the proposition: If we control population growth, we prosper:
  - (a) If we do not control population growth, we prosper
- (b) It we control population growth, we do not prosper
- (c) We control population, but we do not prosper
- (d) We do not control population, but we prosper

# **Section 3: Aptitude & Reasoning**

Q1. Six persons are sitting in a circle. A is facing B. B is to the right of E and left of C. C is to the left of
D. F is to the right of A. Now, D exchanges his seat with F and E with B. Who will be sitting opposite to
C?

- (a) C
- (b) D
- (c) B
- (d) A

Q2. Sanjeev walks 10 metres towards the South. Turning to the left, he walks 20 metres and then moves to his right. After moving a distance of 20 metres, he turns to the right and walks 20 metres. Finally, he turns to the right and moves a distance of 10 metres. How and in which direction is he from the starting point?

- (a) 10 metres North
- (b) 20 meters South
- (c) 20 metres North
- (d) 10 metres South

Q3. If CRUDE is written as BSTED, then MOIST will be coded as:

- (a) NNJRU
- (b) LNHRS
- (c) NPJTU
- (d) LPHTS

Q4. Pointing to a woman, Naman said, She is the daughter of the only child of my grandmother.? How is the woman related to Naman?

- (a) Sister
- (b) Niece
- (c) Brother
- (d) Cousin