



Serial No.: Series 1.SetA

Date

Test Booklet

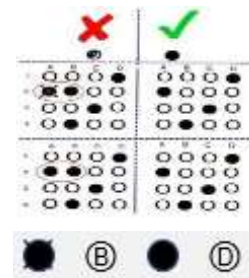
Maximum Marks: 100

Time 2hrs

General Instructions

- **DO NOT OPEN THE BOOKLET UNLESS ASKED TO DO SO. IF FOUND DISOBEYING, YOUR CANDIDATURE WILL BE CANCELLED.**
- **CALCULATORS, MOBILE PHONE OR ANY ELECTRONIC DEVICE IS NOT PERMITTED INSIDE THE EXAMINATION HALL.** If caught possessing any of the aforementioned item, your candidature will be disqualified.
- Immediately after commencement of the examination, check for unprinted, torn or missing pages. If any discrepancy is found, please bring it to the notice of the invigilator and ask for replacement.
- Enter your correct roll number on the Answer sheet.
- Do not write anything in the booklet. You could be disqualified if found disobeying.
- The TEST BOOKLET contains 100 questions, each carrying ONE mark. THERE IS NO NEGATIVE MARKING SYSTEM. There are four choices to every question. Please select the correct response and record it in the answer sheet provided.
- ROUGH SHEETS will be provided separately.

- BEFORE BEGINNING YOUR EXAMINATION, FILL YOUR PARTICULARS CLEARLY IN BLOCK LETTERS.
- RECORD THE TEST BOOKLET CODE CLEARLY IN THE DESIGNATED SPACE
- USE BALL POINT PEN ONLY (BLACK OR BLUE)
- Make sure that your answer sheet is SIGNED by the INVIGILATOR on duty.
- Observe the diagram alongside for the correct method of recording the answer in the OMR sheet.
- Make sure you record ONE response for each answer.
- DO NOT PUT ANY STRAY MARKS IN THE ANSWER SHEET.
- If in any case you record a wrong option please refer to the diagram beside to rectify the recording mistake. In the example alongside A was the wrong option which has been rectified to C.
- After COMPLETION of the EXAMINATION, PLEASE HAND OVER THE ANSWER SHEET AND QUESTION PAPER TO THE INVIGILATOR.



SUBJECT : MATHEMATICS

- Q.1. If a number $573xy$ is divisible by 90, then what is the value of $x + y$?
(a) 6 (b) 9 (c) 3 (d) 8
- Q.2. Which of the following numbers is in standard form?
(a) $\frac{-24}{52}$ (b) $\frac{-49}{71}$ (c) $\frac{-27}{48}$ (d) $\frac{28}{-105}$
- Q.3. What should be added to $\frac{-5}{7}$ to get $\frac{-2}{3}$?
(a) $\frac{-29}{21}$ (b) $\frac{29}{21}$ (c) $\frac{1}{21}$ (d) $\frac{-1}{21}$
- Q.4. The age of A and B are in the ratio 5 : 7. Four years from now the ratio of their ages will be 3 : 4. Then the present age of B is :
(a) 20 years (b) 28 years (c) 15 years (d) 21 years
- Q.5. Two consecutive even numbers are such that half of the larger number exceeds one-fourth of the smaller number by 5. Then the larger number is:
(a) 16 (b) 18 (c) 32 (d) 34
- Q.6. If $0.25(4f-3) = 0.05(10f-9)$, then f is equal to :
(a) 0.6 (b) 0.8 (c) 0.5 (d) 0.4
- Q.7. A number consists of two digits. The digit in the tens place exceeds the digit in the units place by 4. The sum of the digit is $\frac{1}{7}$ of the number. The number is :
(a) 27 (b) 72 (c) 48 (d) 84
- Q.8. How many sides does a regular polygon have, wherein, whose interior angle is eight times its exterior angle ?
(a) 16 (b) 24 (c) 18 (d) 20
- Q.9. ABCD is a rectangle with $\angle BAC = 48^\circ$. Then $\angle DBC$ is equal to :
(a) 38° (b) 42° (c) 48° (d) 132°
- Q.10. The angles A,B,C,D of a quadrilateral ABCD taken in order are in the ratio 3 : 7 : 6 : 4, then ABCD is a :
(a) Rhombus (b) Parallelogram (c) Trapezium (d) Kite

- Q.11. A data set of n observations has mean $2\bar{x}$. While another data set of $2n$ observations has mean \bar{x} . Then the mean of the combined data set of $3n$ observations will be :
- (a) \bar{x} (b) $\frac{3}{2}\bar{x}$ (c) $\frac{2}{3}\bar{x}$ (d) $\frac{4}{3}\bar{x}$
- Q.12. In a class of 17 students, six boys failed in a test. Those who passed scored 12, 15, 17, 15, 16, 15, 19, 17, 18, 18 and 19 marks. The median score of 17 students in the class is :
- (a) 15 (b) 16 (c) 17 (d) 18
- Q.13. The mean age of a class is 16 years . If the class teacher aged 40 years old is also included, the mean age increases to 17 years. The number of students in the class are:
- (a) 23 (b) 33 (c) 44 (d) 16
- Q.14. From a well-shuffled deck of 52 cards, one card is drawn at random. What is the probability that the drawn card is a queen?
- (a) $\frac{1}{4}$ (b) $\frac{1}{52}$ (c) $\frac{1}{13}$ (d) $\frac{1}{26}$
- Q. 15. Which of the following numbers is not a perfect square ?
- (a) 3600 (b) 6400 (c) 81000 (d) 2500
- Q.16. Which least number must be subtracted from 176 to make it a perfect square?
- (a) 16 (b) 7 (c) 10 (d) 4
- Q. 17. $\frac{\sqrt{288}}{\sqrt{128}}$ is equal to :
- (a) $\frac{3}{2}$ (b) 1.49 (c) $\frac{\sqrt{3}}{2}$ (d) $\frac{3}{\sqrt{2}}$
- Q.18. The volume of a cubical box is 32.768 cubic metres. Then the length of a side of the box is :
- (a) 32m (b) 320m (c) 768m (d) 3.2m
- Q.19. By what least number should 648 be multiplied to get a perfect cube?
- (a) 3 (b) 6 (c) 9 (d) 18
- Q.20. Given that $3048625 = 3375 \times 729$. Then what is the cube root of 3048625 ?
- (a) 155 (b) 135 (c) 45 (d) None of these
- Q. 21. I borrowed Rs. 12000 from Jamshed at 6% per annum simple interest for 2 years. Had I borrowed this sum at 6% per annum compound interest, what extra amount would I have to pay ?
- (a) Rs. 144 (b) Rs. 1440 (c) Rs. 72 (d) Rs. 43.20

- Q.22. During a sale, a shop offered a discount of 10% on the marked price of all the items. What would a customer have to pay for a pair of jeans marked at Rs. 1450 and two shirts marked at Rs. 850 each?
 (a) Rs. 2835 (b) Rs.3150 (c) Rs. 2300 (d) None of these
- Q. 23. If the cost price of 10 greeting cards is equal to the selling price of 8 greeting cards. Then the gain or loss % is:
 (a) Loss of 25% (b) Loss of 20% (c) gain of 25% (d) gain of 20%
- Q.24. 'A' can do a piece of work in 20 days which 'B' alone can do in 12 days. 'B' worked at it for 9 days then 'A' can finish the remaining work in :
 (a) 3 days (b) 5 days (c) 7 days (d) 11 days
- Q.25. A car takes 2 hours to reach a destination by travelling at 60 km/hr. How long will it take while travelling at 80 km/hr?
 (a) 1 hrs 30 min (b) 1 hrs 40 min (c) 2 hrs 40 min (d) none of these
- Q. 26. If $x + \frac{1}{x} = 5$ then $x^2 + \frac{1}{x^2} = ?$
 (a) 25 (b) 27 (c) 23 (d) $25\frac{1}{25}$
- Q. 27. $(a+1)(a-1)(a^2+1)$ is equal to :-
 (a) $(a^4 - 2a^2 - 1)$ (b) $(a^4 - a^2 - 1)$ (c) $(a^4 + 1)$ (d) $(a^4 - 1)$
- Q.28. $(82)^2 - 18^2$ is equal to :
 (a) 8218 (b) 6418 (c) 6400 (d) 7204
- Q. 29. How many edges does a square prism have ?
 (a) 9 (b) 12 (c) 16 (d) 8
- Q.30. Three cubes of iron whose edges are 6cm, 8cm and 10 cm respectively are melted and formed into a single cube. The edge of the new cube formed is :
 (a) 12cm (b) 14cm (c) 16 cm (d) 24 cm
- Q.31. If the capacity of a cylindrical tank is 1848m^3 and the diameter of its base is 14m, the depth of the tank is :
 (a) 8m (b) 12m (c) 16m (d) 18m
- Q.32. The edges of a cuboid are in the ratio 1:2:3 and its surface area is 88cm^2 . The volume of the cuboid is :
 (a) 64cm^3 (b) 96cm^3 (c) 120cm^3 (d) 48cm^3

Q.33. The parallel sides of a trapezium are in the ratio 4:3 and the perpendicular distance between them is 12cm. If the Area of the trapezium is 630 cm^2 , then its shorter of the parallel side is :
 (a) 45cm (b) 42cm (c) 60cm (d) 36 cm

Q.34. The base of a triangle is four times its height and its area is 50 m^2 . The length of its base is
 (a) 10m (b) 15m (c) 20m (d) 25m

Q. 35. $\frac{3^n \cdot 3^{2n+1}}{9^n \cdot 3^{n-1}}$ is equal to :

- (a) 1 (b) 9 (c) 3 (d) 3^n

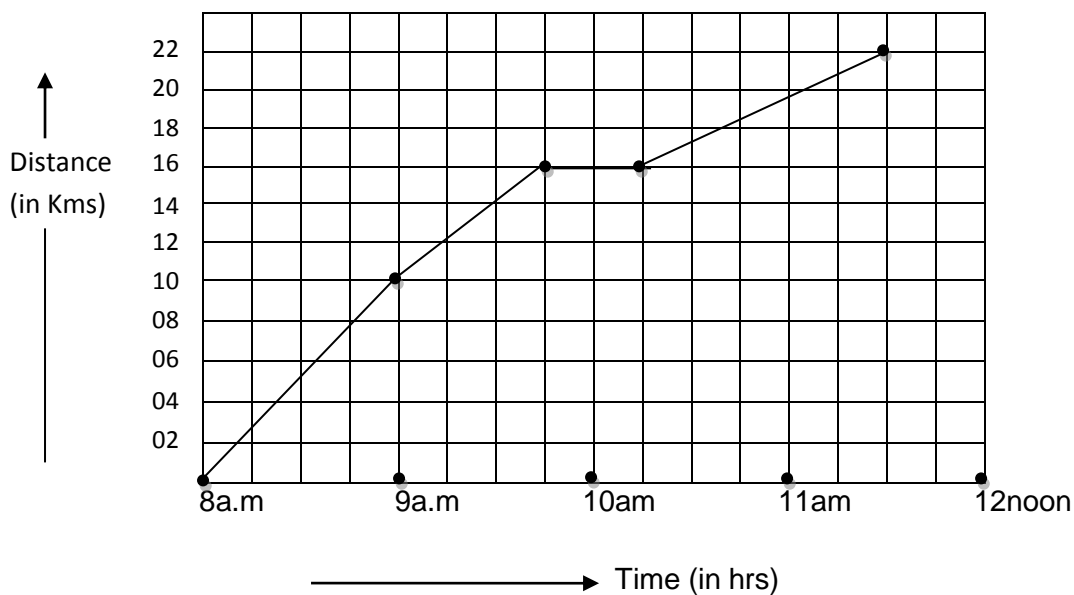
Q.36. $4^{3.5} : 2^5$ is the same as :

- (a) 4 : 1 (b) 2 : 1 (c) 7 : 5 (d) 7 : 10

Q.37. If $a = b^{2/3}$, and $b = c^{-2}$, then what is the value of a in terms of c ?

- (a) $\frac{4}{c^3}$ (b) $\sqrt[3]{c^4}$ (c) $\frac{1}{\sqrt[3]{c^4}}$ (d) $\sqrt[3]{c^3}$

Refer the following graph for Q No. 38 to 42



A courier-person cycles from a town to a neighbouring suburban area to deliver a parcel to a merchant. His distance from the town at different times is shown by the above graph?

- Q.38. What is the scale taken for the time axis?
 (a) .2 units =1hour (b) 1 unit =2 hours (c) 1 unit = 4 hours (d) 4 units = 1hour
- Q.39. How much time did the person take for the travel?
 (a) 2 hours (b) $2\frac{1}{2}$ hours (c) $3\frac{1}{2}$ hours (d) 4 hours
- Q.40. How far is the place of the merchant from town?
 (a) 11 km (b) 22 km (c) 13 km (d) 26 km
- Q.41. When did the person stop on the way?
 (a) between 8 am to 9 am (b) between 9 am to 10 am
 (c) between 10.00 am to 10.30 am (d) between 10.30 am to 11.30 am
- Q.42. During which period did he ride the fastest ?
 (a) between 8 am to 9 am (b) between 9 am to 10 am
 (c) between 10.00 am to 10.30 am (d) between 10.30 am to 11.30 am
- Q.43. Find the values of A, B, C in the following.

$$\begin{array}{r} 9) \overline{4AB} \quad (5C \\ - 45 \\ \hline 3B \\ - 36 \\ \hline 0 \end{array}$$

Then what is the value of A+B+C ?

- (a) 10 (b) 14 (c) 16 (d) 18
- Q.44. If y denotes the digit at hundreds place of the number $67y19$, such that the number is divisible by 11. The value of y is :
 (a) 3 (b) 5 (c) 4 (d) 7
- Q.45. Find three whole numbers a , b and c such that $a + b + c = a \times b \times c$, then what is the value of $a^2 + b^2 + c^2$?
 (a) 14 (b) 15 (c) 16 (d) 17
- Q.46. $3 + 23y - 8y^2$ is equal to :
 (a) $(1-8y)(3+y)$ (b) $(1+8y)(3-y)$ (c) $(1-8y)(y-3)$ (d) $(8y-1)(y+3)$
- Q.47. A motor car starts with a speed of 70 km/hr with its speed increasing every 2 hrs by 10 km/hr. In how many hours will it cover 345 kms ?
 (a) $2\frac{1}{4}$ hrs (b) 4hrs 5 min (c) $4\frac{1}{2}$ hrs (d) 3 hrs

- Q. 48. $(\frac{1}{4}x^2 - \frac{1}{2}x - 12) \div (\frac{1}{2}x - 4)$ is equal to :
- (a) $(x + \frac{3}{2})$ (b) $(\frac{1}{2}x - 3)$ (c) $(2x + 3)$ (d) $(\frac{1}{2}x + 3)$
- Q.49. 1200 soldiers in a fort had enough food for 28 days. After 4 days, some soldiers were transferred to another fort and thus the food lasted now for 32 more days. How many soldiers left the fort?
- (a) 300 (b) 400 (c) 200 (d) 100
- Q. 50. If the perimeter of an isosceles right triangle is $(6 + 3\sqrt{2})m$, then the area of the triangle is
- (a) $5.4m^2$ (b) $81m^2$ (c) $9m^2$ (d) $4.5m^2$

ENGLISH LANGUAGE

Q.51 The correctly punctuated sentence is :

- (a) He asked me, "whether I had done my work".
- (b) He asked me, "whether I had done my work"?
- (c) He asked me whether I had done my work ?
- (d) He asked me whether I had done my work.

Q.52 Which of the following will be the correct indirect speech if the statement given below is changed into it?

He said, "I shall leave these papers here."

- (a) He said that he would leave those papers there.
- (b) He said that he should leave those papers there.
- (c) He said that he would leave these papers there.
- (d) He said that he would leave those papers here.

Q.53 The correct passive form of the following sentence is :

They asked me my name.

- (a) My name was asked me by them.
- (b) I was asked my name.

- (c) Me was asked my name by them.
- (d) My name was asked from them.

Q.54 The correct meaning of the word 'calamity' is:

- (a) disaster
- (b) scourge
- (c) harm
- (d) injury

Q.55 'Red Letter Day' means :

- (a) a dangerous day
- (b) a rosy day
- (c) an important day
- (d) a bloody day

Q.56 The correct antonym of the word 'assets' is:

- (a) liabilities
- (b) estate
- (c) responsibilities
- (d) hindrances

Q.57 The plural form of 'alumnus' is:

- (a) alumnuses
- (b) alumna
- (c) alumnae
- (d) alumni

Q.58 'Alma Mater' is the place where one:

- (a) studied
- (b) married
- (c) died
- (d) was born

Q.59 Identify the part which contains an error in the following sentence.

Ten miles are not a long distance.

- (a) ten miles
- (b) are not
- (c) a long distance
- (d) no error

Q.60 Choose the correct order to make the sentence below meaningful.

History of India/ than / was there a / Mahatma Gandhi/ never in the /greater man.
1 2 3 4 5 6

- (a) 124356
- (b) 634521
- (c) 513126
- (d) 513624

Q.61 Fill in the blank with a suitable Phrase Preposition.

He accepted the car _____ his claim for Rs 3,25,000.

- (a) on account of
- (b) by dint of
- (c) in lieu of
- (d) because of

Q.62 The suitable prefix for the word “bitter” is:

- (a) im
- (b) in
- (c) un
- (d) em

Q.63 Fill in the blank with a suitable Conjunction.

He is slow, _____ he is sure.

- (a) and
- (b) for
- (c) but
- (d) or

Q.64 Complete the following maxim.

Genius without education is like silver in the _____.

- (a) shop
- (b) mine
- (c) Well
- (d) pit

Q.65 Select the word that is opposite in meaning to the underlined word.

My first lecture in the classroom was a fiasco.

- (a) success
- (b) joy
- (c) fun
- (d) disaster

Q.66. The right suffix for the word 'just' to make it an abstract noun is:

- (a) - ly
- (b) - ify
- (c) - ice
- (d) - ing

Q.67 Select the word that is similar in meaning to the underlined word.

The requisite energy is derived from the battery.

- (a) insignificant
- (b) necessary
- (c) different
- (d) special

Q.68 Select the word that is similar in meaning to the underlined word.

His candid opinion has won him many friends.

- (a) kind
- (b) courteous
- (c) generous
- (d) frank

Q.69 Select the word that is opposite in meaning to the underlined word.

Everyone agreed that it was a piece of meticulous research.

- (a) careless
- (b) careful
- (c) cautious
- (d) scrupulous

Q.70 The word 'avert' means:

- (a) avoid
- (b) fall
- (c) hatred
- (d) degenerate

Q. 71 The adjective form of 'boast' is :

- (a) boastful
- (b) boastly
- (c) boasty
- (d) boastile

Read the following passage and answer the questions that follow .

Vehicles do not move about the roads for mysterious reasons of their own. They move only because people want them to move in connection with the activities which the people are engaged in. Traffic is therefore a 'function of activities', and because, in towns, activities mainly take place in buildings, traffic in towns is a 'function of buildings'. The implications of this line of reasoning are inescapable.

Q.72 Line 1 of the passage means that the vehicles move on the roads

- (a) for reasons difficult to explain.
- (b) to serve specific purposes of people.
- (c) in a haphazard fashion.
- (d) in ways beyond our control.

Q.73 The author says that traffic is a 'function of activities'. He means that

- (a) human activities are taking place.
- (b) human activities are dependent on traffic.
- (c) traffic is not dependent on human activities.

(d) traffic is connected with human activities.

Q.74 The author suggests by his argument that

(a) to regulate traffic, more policemen have to be employed.

(b) to regulate activities, traffic has to be controlled.

(c) to regulate traffic, buildings have to be taken into consideration.

(d) to understand the traffic problem, we must examine the social context in which it is found.

Q. 75 By 'this line of reasoning', the author means

(a) idea contained in this line.

(b) idea contained in any one line of his argument.

(c) the manner of arguing.

(d) this row of printed characters.

SUBJECT : GENERAL SCIENCE

Q.76. Tungsten (a transition element) being a metal exhibits the following properties:-

- (I) It is sonorous
- (II) It possesses high tensile strength
- (III) It possesses high melting point
- (IV) It has high density

Which of the above property/properties of Tungsten made it a suitable material for the filament of an electric bulb?

- (a) I, II and III (b) II and III (c) Only III (d) II, III and IV

Q.77. Hepatitis-B is caused due to :-

- (a) Virus (b) Protozoa (c) Bacteria (d) Fungi

Q.78. The production of an exact copy of an animal by asexual reproduction is known as :-

- (a) Cloning (b) Mating (c) Budding (d) Hatching

Q.79. The device which can be used to detect very small current flowing in an electric circuit is:

- (a) LEAD (b) MCB (c) LED (d) None of these

- Q.80. Which of these unicellular organisms has no definite shape?
 (a) Amoeba (b) Paramecium (c) Euglena (d) Bacteria
- Q.81. Which is a thermosetting plastic?
 (a) Polythene (b) Melamine (c) PVC (d) Nylon
- Q.82. Solution of which of the following oxides in water will change the colour of blue litmus to red?
 (a) Sulphur dioxide (b) Magnesium oxide (c) Iron oxide (d) copper oxide
- Q.83. In India, PCRA advises how to save petrol/diesel while driving. For this, PCRA gave several tips. Here, PCRA stands for :
 (a) Pollution Control Research Association
 (b) Petroleum Conservation Research Association
 (c) Petroleum Collection and Reserve Association
 (d) None of the above.
- Q.84. An electrolyte is :
 (a) a metal (b) a solution
 (c) a liquid that conducts current (d) All of the above.
- Q.85. As the angle between two plane mirrors is decreasing gradually, the number of images of an object placed between them:
 (a) first increases then decreases (b) first decreases then increases
 (c) increases (d) decreases
- Q.86. Purest form of carbon is:
 (a) Coal (b) Charcoal (c) Coke (d) All of these
- Q.87. Value of one light year in S.I unit is:
 (a) 1.5×10^{11} m (b) 9.46×10^{15} m (c) 1.5×10^{15} m (d) 9.46×10^{12} m
- Q.88. Which of the following liquids does not conduct electricity?
 I Lemon juice II Sugar solution
 III Distilled water IV Dilute Hydrochloric acid
 (a) I, II, and IV (b) Only III (c) Only IV (d) III and IV
- Q.89. I- Fungi, II- Bacteria
 Consider the following statements and find the correct one:
 (a) II are small prokaryotes while I are large celled eukaryotes with defined mitochondria and other organelles.
 (b) II have a sexual reproduction through conjugation and transformation but I through genetic recombination.
 (c) II have a sexual reproduction through conjugation and transformation but I through genetic recombination.
 (d) All of the above

- Q.90 When the applied force is doubled and the object is still at rest, then friction becomes:
 (a) doubled (b) halved (c) quadrupled (d) zero
- Q. 91. Oxides of which element(s) is/are present in acid rain?
 I Carbon II Nitrogen III Sulphur
 (a) I and II (b) II and III (c) I and III (d) I, II and III
- Q.92. Which of the following tools would a farmer use to remove weeds from the field?
 (a) Hoe (b) plough (c) Axe (d) cultivator
- Q.93. _____are the smallest micro-organisms which can develop only inside the cell of the _____ Organism. They do not respire, feed, grow, excrete or move on their own but they cannot _____.When they are outside the _____cell, they behave as _____.
- Choose the correct order to fill the blanks:
- (a) Bacteria, Host, Multiply, Animal, Living
 (b) Virus, Bacteria, Reproduce, Living, Non-living
 (c) Virus, Host, Exchange gases, Living, Non-living
 (d) Virus, Host, Reproduce, Living, Non-living
- Q.94. In the process of vulcanisation, Natural rubber is treated with an element **X** to improve its properties.
 The element **X** can be:
 (a) Carbon (b) Nitrogen (c) Sulphur (d) Phosphorus
- Q.95. The standard value of atmospheric pressure is
 (a) 78 cm of Hg (b) 76mm of Hg (c) 45 cm of Hg (d) 0.76cm of Hg
- Q.96. The sound from a mosquito is produced when it vibrates its wings at an average rate of 500 vibrations per second. What is the time period of vibration?
 (a) 2 s (b) 0.002 s (c) 0.02 s (d) 0.2 s
- Q.97. The change in focal length of an eye lens to focus the image of objects at varying distances is done by the action of
 (a) Pupil (b) Iris (c) Retina (d) Ciliary muscles
- Q.98. Which cell organelle is called the power House of a cell ?
 (a) Lysosomes (b) Golgi bodies (c) Mitochondria (d) Ribosomes

Q.99. The dramatic changes in body features associated with puberty are mainly because of the secretions of

- | | | | | | | | |
|-----|------------|------|--------------|-------|-------------|------|--------------|
| (i) | Thyroxine | (ii) | Estrogen | (iii) | Adrenalin | (iv) | Testosterone |
| (a) | (i) & (ii) | (b) | (ii) & (iii) | (c) | (i) & (iii) | (d) | (ii) & (iv) |

Q.100. The earth rotates around its axis. The sun appears to rise in the east. Venus rotates in the opposite direction of Earth . We can therefore assume that on Venus, the sun sets in the

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

