



# The PathShala

## MOCK Test (Class 9<sup>th</sup> Going to 10<sup>th</sup>)

Time : 90:00 Min

Beware Of Negative Marking

Max. Marks : 400

### Sample Paper

#### Test Syllabus

- MAT : Series Completion, Analogy, Classification
- Physics : Motion
- Chemistry : Nature of Matter, Elements, Compounds and Mixture, Heterogeneous and Homogenous, Mixture, Colloids and Suspensions
- Mathematics : Number System, Polynomials, Coordinate Geometry
- Biology : Cell : Fundamental Unit of Life, Tissues
- Social Science : French Revolution, Socialism in Europe and Russian Revolution, What is Democracy, Why Democracy, Story of Village Palampur,  
Indian : Size and Location; Physical Features, Drainage

#### INSTRUCTIONS

1. Fill up the particulars of Your name, Registration No, Name of School, Mobile No and Test Date etc.
2. This Question paper consists of three sections. Section A, Section B and Section C.

Section	Subject	Question	Marking Schemes of each correct answer.	
			Correct Answer	Wrong Answer
Section A	MAT	Q 01 to Q 35	+4	-1
Section B	Physics	Q 36 to Q 45	+4	-1
Section C	Chemistry	Q 46 to Q 55	+4	-1
Section D	Mathematics	Q 56 to Q 70	+4	-1
Section E	Biology	Q 71 to Q 80	+4	-1
Section F	Social Science	Q 81 to Q 100	+4	-1

Candidate ID :

Name of the Student : .....

Name of the School in which you study : .....

Student Mobile No : .....Test Date .....

Invigilator Signature

Student Signature

.....

.....

**MENTAL ABILITY****SECTION-A**

**Directions (Q. Nos. 01 – 05)** In each of the following questions, there is a certain relationship between two given numbers/groups of letters on one side of (: :) while another number/group of letters is to be found from given options, having the same relationship with this number/group of letters as the numbers/groups of letters of the given pair bear. Choose the best option.

1. WRITE : JEVGR :: WRONG : ?  
 (A) JEBAT (B) JECA (C) JEDAT (D) JEDAD
2. TNGP : 2014716 :: LPDT : ?  
 (A) 2041612 (B) 1216204 (C) 2116420 (D) 1216420
3. PST : 01 :: NPR : ?  
 (A) 3 (B) 4 (C) 1 (D) 7
4. 212 : 436 :: 560 : ?  
 (A) 786 (B) 682 (C) 784 (D) 688
5. 63 : 9 :: ? : 14  
 (A) 68 (B) 42 (C) 96 (D) 56

**Directions (Q. Nos. 06 to 08)** In each of the following questions, there is a relationship between two given number/group of letters on one side of (: :) and one number/groups of letters is given on another side of (: :) while another number/groups of letters is to be found given options, having the same relationship with this number/group of letters as the numbers/groups of letters of the given pair. Choose the best option.

6. 432 : 24 :: 735 : ?  
 (A) 105 (B) 25 (C) 73 (D) 81
7. DARE : ADER :: REEK : ?  
 (A) EEKR (B) EKER (C) ERKE (D) EERK
8. CEGI : RTVX :: IKMO : ?  
 (A) JKNP (B) MNQP (C) LNPR (D) DFHI

**Directions (Q. Nos. 09 to 10)** For each of the following questions select the answer pair that expresses a relationship most similar to that expressed in the given pair.

9. Omniscient : Knowledge  
 (A) Saturnine : Energy (B) Boundless : Expanse (C) Inquisitive : Science (D) Complete : Retraction

10. Nebulous : Form  
 (A) Insincere : Misanthrope (B) Benevolent : Excellence  
 (C) Insipid : Taste (D) Composed : Innocence

**Directions (Q. Nos. 11 to 13)** in each of the following question three out of the four alternatives letters/numbers of the alphabet placed in a particular form. Find the one that does not belong to the group.

11. (A) C9F (B) H20L (C) N31Q (D) E29Y  
 12. (A) CEH (B) KMP (C) XZC (D) NPT  
 13. (A) ABC (B) D22G (C) H42M (D) F34J

**Directions (Q. Nos. 14 to 17)** In each of the following questions/three and five/four are alike in a certain way and so form a group. While is the one that does not belong to the group?

14. (A) Camel (B) Horse (C) Bullock (D) Cat  
 15. (A) Wood (B) Stone (C) Tree (D) Engine  
 16. (A) 52 (B) 96 (C) 24 (D) 36  
 17. (A) 125 (B) 216 (C) 729 (D) 525

**Directions (Q. Nos. 18 to 20)** In each of the following question, five/four words/number are given, out of which four/three are same in one way or the other and the fifth/forth one is different from these four/three. Select the odd one.

18. (A) Sun (B) Moon (C) Venus (D) Mars  
 19. (A) Microphone (B) Microscope (C) Spectacles (D) Telescope  
 20. (A) Diamond (B) Ruby (C) Emerald (D) Turquoise  
 21. 4, 9, 20, 43, ?  
 (A) 90 (B) 84 (C) 96 (D) 95  
 22. 1, 3, 7, 15, 31, ?  
 (A) 37 (B) 36 (C) 73 (D) 63  
 23. 7, 8, 24, 105, 361, ?  
 (A) 986 (B) 617 (C) 486 (D) 1657  
 24. 2, 3, 4, 9, 3, 4, 5, 12, 4, 5, 6, 15, 2, ?, 7, 18  
 (A) 8 (B) 7 (C) 6 (D) 9

25. 2, 8, 18, 32, 50, ?

(A) 64

(B) 72

(C) 70

(D) 68

**Directions (Q. Nos. 26 to 20)** In each of the following questions, continuous pattern series is given. Some of the letters of the series are missing. These missing letters are given in that order as one of the four alternatives below the series. Find out the correct alternatives.

26. c\_bba\_cab\_ac\_ab\_ac

(A) b, c, b, a, c

(B) c, a, b, c, b

(C) a, c, c, b, c

(D) a, c, b, c, b

27. b\_acbda\_bd\_cb\_a\_

(A) baadc

(B) dcadc

(C) cbdca

(D) cdacb

28. c\_abbcc\_bb\_cab\_c\_abb

(A) abcca

(B) babac

(C) cbbca

(D) cacbc

29. aa\_aaa\_aaaa\_aaaa\_b

(A) baaa

(B) bbaa

(C) bbbb

(D) bbba

30. \_A\_A\_ \_B A B\_B\_ B A B A

(A) BBABAA

(B) BBBAAA

(C) ABABBA

(D) BBAABB

**Directions (Q. Nos. 31 to 35)** What value should come in place of the question mark (?) in the series given below?

31. 2B, 4C, 8E, 14H, ?

(A) 16 K

(B) 20I

(C) 20L

(D) 22L

32. 2, A, 9, B, 6, C, 13, D, ?

(A) 9

(B) 10

(C) 12

(D) 19

33. CD-12, LB-24, BP-32, NE-?

(A) 70

(B) 75

(C) 45

(D) 95

34. Q1, P2, R6, N24, V120, ?

(A) W600

(B) X720

(C) F720

(D) F600

35. A1Z, E2V, I6R, M21N, Q88J, ?

(A) F 445U

(B) U 445F

(C) G342C

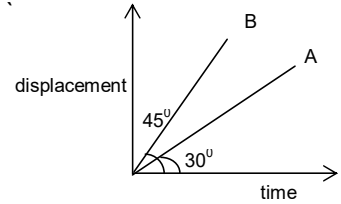
(D) V441G

**PHYSICS**

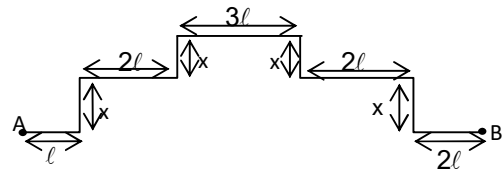
**SECTION-B**

36. A ball of mass 200gm is released from a top of a building of height 80m. What is the momentum of the ball just before striking the ground?  
 (A) 80 kg m/sec                      (B) 8 kg m/sec                      (C) 40 kg m/sec                      (D) None

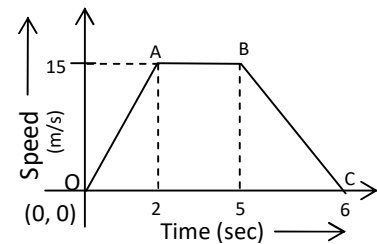
37. The graph represents displacement of two particles with time. Ratio of velocity of A to velocity of B is  
 (A)  $\sqrt{3} : 1$     (B) 1 : 1  
 (C) 1 : 2    (D) 1 :  $\sqrt{3}$



38. Find the displacement of an ant which travels from A to B as shown in figure.  
 (A)  $10\ell$     (B)  $10\ell + 4x$   
 (C)  $3\ell$     (D) None

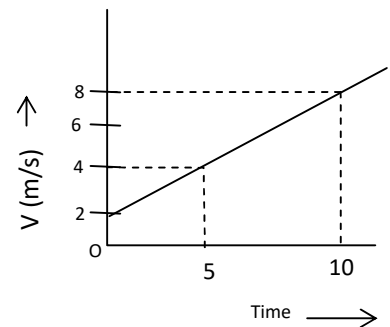


39. The speed-time graph of a car is given. Find the ratio of initial acceleration and final deceleration of the car.  
 (A) 1:1    (B) 1:2  
 (C) 1:4    (D) 3:1



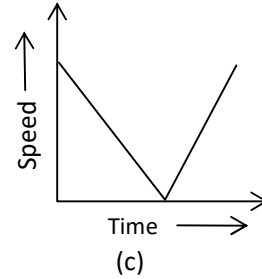
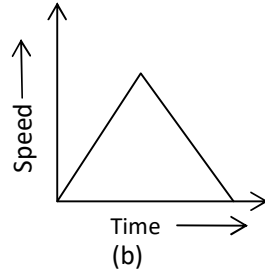
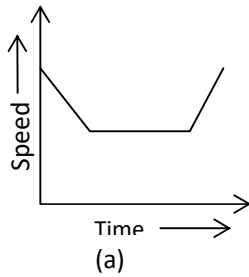
40. A particle is moving in a circle of radius 3R. What is its displacement when it covers full circle  
 (A) zero    (B)  $2\pi R$     (C)  $6\pi R$     (D) None
41. A stone is released from an elevator going up with an acceleration a. The acceleration of the stone after the release for an observer on ground is  
 (A) a upward    (B)  $(g - a)$  upward    (C)  $(g - a)$  downward    (D) g downward

42. Figure shows the graph of velocity versus time for a particle going along the x-axis. Find the acceleration of the particle  
 (A)  $0.8 \text{ m/s}^2$     (B)  $0.6 \text{ m/s}^2$   
 (C) zero    (D)  $0.4 \text{ m/s}^2$



43. Three speed-time graphs are given below:

Which graph represents the case of :a coin thrown vertically upwards and returning to the hands of the thrower?



- (A) a                                      (B) b                                      (C) c                                      (D) none

44. The velocity of a particle is zero at  $t = 0$ , mark the incorrect statement.

- (A) The acceleration at  $t = 0$  must be zero                      (B) The acceleration at  $t = 0$  may be zero  
 (C) If the acceleration is zero, from  $t = 0$  to  $t = 10s$ , the speed may also be zero in this interval  
 (D) If the speed is zero from  $t = 0$  to  $t = 10s$ , the acceleration is also zero on this interval

45. A bullet going with speed  $\sqrt{10}m/s$  enters a concrete wall and penetrates a distance of 5cm before coming to rest. Find the deceleration.

- (A)  $1000 m/s^2$                       (B)  $100 m/s^2$                       (C)  $200 m/s^2$                       (D)  $400 m/s^2$

**CHEMISTRY****SECTION-C**

46. Which of the following statement is wrong?  
(A) At room temperature evaporation of water is rapid as compared to ethanol.  
(B) Water is more viscous as compared to ethanol  
(C) Liquid drops are spherical in shape  
(D) Clothes are easily dried in dry days as compared to humid days
47. The weight of two elements which combine with one another are in the ratio of their  
(A) atomic weight      (B) molecular weight      (C) gram mole      (D) equivalent weight
48. When molten form of crystalline solid is rapidly cooled, it changes into  
(A) crystalline solid      (B) amorphous solid      (C) insulator      (D) super conductor
49. Artificial rain is based on the principle of  
(A) coagulation  
(B) electrophoto electric effect  
(C) emulsification  
(D) Tyndall effect
50. If a gas is expanded at constant temperature  
(A) the pressure increases      (B) the kinetic energy of the molecule remains the same  
(C) the kinetic energy of the molecule decreases  
(D) the number of molecules of the gas increases
51. Which one of the following properties of an element is not variable?  
(A) Valency      (B) Equivalent weight      (C) Atomic weight      (D) All of the above
52. Which one of the following is a correct statement?  
A. Ice provides more cooling effect than water at 273K  
B. Evaporation of a liquid causes cooling  
C. Increase of pressure lowers the separation between particles of matter  
(A) A and B      (B) A and C      (C) B and C      (D) A, B and C
53. Which of the following is a pseudo solid?  
(A)  $\text{CaF}_2$       (B) NaCl      (C) Glass      (D) All of the above
54. A universal indicator is made by dissolving methyl orange, bromothymol blue and phenolphthalein in alcohol. Which of the following processes could best be used to separate the methyl orange component from the universal indicator solution?  
(A) Chromatography      (B) Filtration      (C) Distillation      (D) Decantation
55. The process of making colloidal solution from the precipitate is called  
(A) coagulation      (B) peptization      (C) vulcanization      (D) flocculation

## MATHEMATICS

### SECTION-D

56. If  $x = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$  and  $y = \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$  the value of  $x^2 + xy + y^2$  is :
- (A) 99                      (B) 100                      (C) 1                      (D) 0
57. If the vertices of a triangle be  $(a, b-c)$ ,  $(b, c-a)$  and  $(c, a-b)$ , then the centroid of the triangle lies -
- (A) On y-axis                      (B) On x-axis                      (C) At origin                      (D) None of these
58. On simplifying  $(a + b)^3 + (a - b)^3 + 6a(a^2 - b^2)$  we get :
- (A)  $8a^2$                       (B)  $8a^2b$                       (C)  $8a^3b$                       (D)  $8a^3$
59. Find the value of  $\frac{a^3 + b^3 + c^3 - 3abc}{ab + bc + ca - a^2 - b^2 - c^2}$ , when  $a = -5, b = -6$  and  $c = 10$ .
- (A) 1                      (B) -1                      (C) 2                      (D) -2
60. Ramesh travels 760 km to his home partly by train and partly by car. He taken 8 hr, if he travels 160 km by train and the rest by car. He takes 12 minutes more, if he travels 240 km by train and the rest by car. Then the speed of train is
- (A) 60 km/hr                      (B) 80 km/hr                      (C) 100 km/hr                      (D) 120 km/hr
61. A boat goes 12 km upstream and 40 km downstream in 8 hrs. It can go 16 km. upstream and 32 km downstream in the same time. Then the speed of the boat in still water is
- (A) 6 km/hr                      (B) 5 km/hr                      (C) 4 km/hr                      (D) 2 km/hr
62. A vessel contains mixture of  $24\ell$  milk and  $6\ell$  water and a second vessel contains a mixture of  $15\ell$  milk &  $10\ell$  water. Then mixture of milk and water should be taken from the first and the second vessel separately and kept in a third vessel so that the third vessel may contain a mixture of  $25\ell$  milk and  $10\ell$  water are
- (A)  $25\ell$  and  $10\ell$                       (B)  $20\ell$  and  $15\ell$                       (C)  $22\ell$  and  $13\ell$                       (D)  $18\ell$  and  $17\ell$
63. If  $\alpha$  and  $\beta$  are the zeros of the quadratic polynomial  $f(x) = x^2 - 2x - 8$  then  $\alpha^2 + \beta^2 =$
- (A) 16                      (B) 24                      (C) 20                      (D) 25
64. If  $x = \frac{4}{3}$  is a root of the polynomial  $f(x) = 6x^3 - 11x^2 + kx - 20$  then the value of k is
- (A) 16                      (B) 18                      (C) 19                      (D) 24
65. If  $x + 1$  and  $x + 2$  are factors of  $P(x) = x^3 + 3x^2 - 2\alpha x + \beta$  then  $(\alpha + \beta)^2 =$
- (A) 1                      (B) 4                      (C) 9                      (D) 16
66. In a right angled triangle. One acute angle is double the other then the hypotenuse is :
- (A) Equal to smallest side                      (B) Double the smallest side  
(C) Triple the smallest side                      (D) None of these



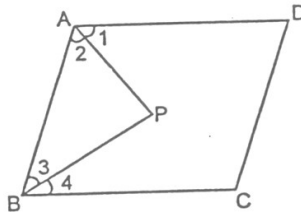
67. Factors of polynomial  $x^3 - 3x^2 - 10x + 24$  are :

- (A)  $(x - 2)(x + 3)(x - 4)$  (B)  $(x + 2)(x + 3)(x + 4)$   
 (C)  $(x + 2)(x - 3)(x - 4)$  (D)  $(x - 2)(x - 3)(x - 4)$

68. If  $(x + a)$  is a factor of  $x^2 + px + q$  and  $x^2 + mx + n$  then the value of  $a$  is :

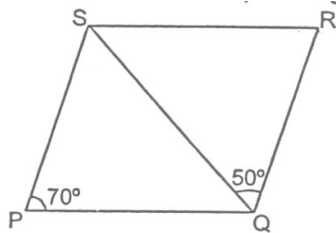
- (A)  $\frac{m-p}{n-q}$  (B)  $\frac{n-q}{m-p}$  (C)  $\frac{n+q}{m+p}$  (D)  $\frac{m+p}{n+q}$

69. In the adjoining figure, AP and BP are angle bisectors of  $\angle A$  and  $\angle B$  which meets at P on the parallelogram ABCD. Then  $2\angle APB =$



- (A)  $\angle C + \angle D$  (B)  $\angle A + \angle C$  (C)  $\angle B + \angle D$  (D)  $2\angle C$

70. From the figure find the value of  $\angle SQP$  and  $\angle QSP$  of parallelogram PQRS.



- (A)  $60^\circ, 50^\circ$  (B)  $60^\circ, 45^\circ$  (C)  $70^\circ, 35^\circ$  (D)  $35^\circ, 70^\circ$

**BIOLOGY****SECTION-E**

71. Red blood cells when placed in a hypotonic solution will \_\_\_\_\_. This process is known as  
 (A) Shrink, crenation (B) Swell up, plasmolysis  
 (C) Turgid, deplasmolysis (D) Burst, haemolysis
72. Pinocytosis is a type of endocytosis which can be referred to as  
 (A) Intake of liquid food by the cell (B) Cell vomiting  
 (C) Cell drinking (D) Both (1) & (3)
73. Active transport occurs  
 (A) Along the concentration gradient and does not require ATP.  
 (B) Against the concentration gradient and does not require ATP  
 (C) Along the concentration gradient and requires ATP.  
 (D) Against the concentration gradient and requires ATP.
74. Which of the following is a characteristic of mitochondria that is similar to a prokaryotic cell?  
 (A) Presence of circular DNA without any covering  
 (B) Presence of cristae  
 (C) Presence of 70S ribosomes  
 (D) Both (A) and (C)
75. In case, the ribosomes of a cell are destroyed then  
 (A) Respiration will take place (B) Fats will not be stored  
 (C) Carbon assimilation will occur (D) Proteins synthesis will not occur
76. Match the following
- | Column – I                                 |       | Column – II                               |  |
|--|-------|---|--|
| a. Bone                                    | (i)   | Eosinophils                               |  |
| b. Carilage                                | (ii)  | Monocytes                                 |  |
| c. Granulocytes                            | (iii) | Hard and inflexible                       |  |
| d. Largest leucocytes                      | (iv)  | Nerve cells                               |  |
| e. Nodes of Ranvier                        | (v)   | Soft and flexible                         |  |
| (A) a (v) , b (iii), c (ii), d (i), e (iv) |       | (B) a (iii), b (v), c (ii), d (i), e (iv) |  |
| (C) a (v), b (iii), c (ii), d (iv), e (i)  |       | (D) a (iii), b (v), c (i), d (ii), e (iv) |  |
77. Choose incorrect statement regarding the water storing tissue present in succulents like prickly pear.  
 (A) It checks loss of water from epidermis (B) It is the most advanced tissues  
 (C) In lower plants, it helps in conducting of food substances in liquid form  
 (D) It acts as a packing tissue in xylem and phloem

78. Mark the odd word out from each of the following and then select the correct group of odd ones from the below given alternatives:
- (a) Arteries, smooth muscles, vein, capillaries                      (b) Lymphocyte, monocyte, erythrocyte, eosinophil
- (c) Dendrites, axon, synaptic knob, sarcoplasm
- (A) Capillaries, eosinophil, synaptic knob                      (B) Smooth muscles, erythrocyte, sarcoplasm
- (C) Veins, monocyte, dendrites                      (D) Smooth muscles, erythrocyte, synaptic knobs
79. Which of the following statement is not true about involuntary muscles present in our body?
- (A) These are found in the walls of hollow visceral organs
- (B) These are of two types and both types contain intercalated discs which function like boosters for quick transmission of impulse
- (C) These muscles do not get fatigued easily
- (D) These muscles contain uninucleated muscle fibres with centrally placed oval nuclei
80. Sprain is caused by excessive pulling of
- (A) Muscles                      (B) Ligaments                      (C) Tendons                      (D) Nerves

**SOCIAL SCIENCE****SECTION-F**

81. Karl Marx wanted workers to overthrow  
 (A) Capitalism (B) Rule of private property  
 (C) Accumulation of profits by capitalists (D) Radicals
82. In the context of Russia who launched the slogan – “Peace, Land and Bread”?  
 (A) Stalin (B) Resputin (C) Lenin (D) Trotsky
83. In the contest of Russia, what was “Kulak”?  
 (A) A collective farm (B) A Russian Church  
 (C) Well – to – do peasant (D) Landler Laborers
84. The Jadidists of Russia aimed that.  
 (A) Socialist should rule Russia (B) Democrats should rule Russia  
 (C) Modernised Muslims should rule Russia (D) Liberal Christians should rule Russia
85. Which of the following rivers do not discharge its water in the Arabian sea  
 (A) Narmada (B) Mahi (C) Tapi (D) Mahanadi
86. Which river is popularly known as Dakshin Ganga?  
 (A) Godauri (B) Mahanadi (C) Periyar (D) Krisna
87. Which one of the following inputs is not a working capital?  
 (A) Machines (B) Raw – Materials (C) Money (D) None of these
88. Which is the most abundant factor of production in India?  
 (A) Land (B) Capital (C) Labour (D) Tools
89. Who is a person who puts together land, labour and Capital?  
 (A) Moneylender (B) Entrepreneur (C) Zamindar (D) Manager
90. Which of the following terms is used for measuring crop produced on a given piece of land during a single reason-  
 (A) Yield (B) Productivity (C) Cultivation (D) Output
91. Which of the following river originates in the pushkar valley of the aravalli.  
 (A) Narmada (B) Sabarmati (C) Saraswati (D) Luni
92. Jog falls is located on –  
 (A) Shravati river (B) Kaveri (C) Kabini (D) Krishna
93. Which of the following has reduced India’s distance from Europe by 7000 km?  
 (A) Suez Canal (B) Panama Canal (C) Indira Gandhi Canal (D) Buckingham Canal
94. Tropic of cancer does not pass through  
 (A) Rajasthan (B) Odisha (C) Chhatisgarh (D) Tripura
95. Which geographical feature bonds India’s mainland south of 22°N latitude.  
 (A) Young fold mountains (B) Sandy desert  
 (C) Lava plateaus (D) Seas and ocean
96. Which organ of the government is required to protect the rights of the citizens?  
 (A) Executive (B) Legislature (C) Polide (D) Independent Judiciary

97. Which body in Indian political system is an example of direct democracy?  
(A) Zila Parishad (B) Panchayat Samiti (C) Gram Sabha (D) Vidhan Sabha
98. Which of these is an example of perfect democracy?  
(A) USA (B) UK (C) India (D) None of the above
99. When do we celebrate International Day of Democracy  
(A) 14<sup>th</sup> September (B) 15<sup>th</sup> September (C) 10<sup>th</sup> September (D) 16<sup>th</sup> September
100. A sudden violent and illegal seizure of power from a government by military  
(A) Coup (B) Duma (C) Dictatorship (D) Tyranny