

**FOUNDATION PROGRAMME CLASS IX** 27-12-2017  
**SCREENING CUM SCHOLARSHIP TEST**

**(Students who are studying in Class VIII)**

**PHYSICS + CHEMISTRY + MATHS + BIOLOGY**

<b>Time : 120 minutes</b>	<b>Number of Questions : 100</b>	<b>Maximum Marks : 400</b>
Name of the Candidate :		
Signature of Candidate :		
Phone Number / Mobile No. :		
Name of the School Studying :		
Class Studying :		<b>Roll. No.</b>
Test Centre:	Signature of Invigilator	

**INSTRUCTIONS**

1. Please fill in the items such as name, signature, centre etc. of the candidate in the columns given above.
2. Please ensure question booklet code is printed on the top right corner of this page is same as in the OMR answer sheet.
3. This question booklet contains 100 questions. For each question, four answers are suggested and given against (A), (B), (C) and (D) of which, only one will be the **Most Appropriate Answer**. Mark the bubble containing the letter corresponding to the 'Most Appropriate Answer' in the OMR answer sheet, by using either **Blue or Black ball - point pen only**
4. Each correct answer will be awarded **FOUR** marks. ONE mark will be deducted for each incorrect answer. More than one answer marked against a question will be deemed as an incorrect response and will be negatively marked. No negative mark for unattended questions.
5. All the rough work is to be done in the blank space provided in the question paper.
6. **WARNING:** Any malpractice or any attempt of malpractice, in the Examination, will **DISQUALIFY THE CANDIDATE**.
7. **Return the answer sheet to the invigilator at the end of the examination.**

**IMMEDIATELY AFTER OPENING THIS QUESTION BOOKLET, THE CANDIDATE SHOULD VERIFY WHETHER THE QUESTION BOOKLET ISSUED CONTAINS ALL THE 100 QUESTIONS IN SERIAL ORDER. IF NOT, REQUEST FOR REPLACEMENT**

## PHYSICS

1. During dry weather while combing hair, some times we experience hair flying apart. The force responsible for this is  
A) force of gravity      B) electrostatic force      C) force of friction      D) magnetic force
2. When we press the bulb of a dropper with its nozzle kept in water, air in the dropper is seen to escape in the form of bubbles. Once we release the pressure on the bulb, water gets filled in the dropper. The rise of water in the dropper is due to  
A) pressure of water      B) gravity of the earth  
C) shape of the rubber bulb      D) atmospheric pressure
3. Two objects repel each other. This repulsion could be due to the  
A) frictional force only      B) electrostatic force only  
C) magnetic force only      D) either a magnetic or an electrostatic force
4. Imagine a girl of mass 50kg standing on pencil heels, each of area of cross section of  $1\text{cm}^2$ , and an elephant of mass 2000kg and foot area  $250\text{cm}^2$  standing on floor. Which of the two exerts more pressure on the floor?  
A) Elephant      B) Girl      C) Both are same      D) can't be determined
5. Brakes of automobiles do not work well during rainy season because  
A) we can't apply much force on brakes during rainy season  
B) water acts as a lubricant between wheel drum and brake shoe  
C) water destroys the wheel drum  
D) Both 1 and 2 are correct
6. Match the column  

<b>Column 1</b>	<b>Column 2</b>
1. Friction	a) Reduces friction
2. Streamlined shape	b) Self adjusting force
3. Grooves	c) Rolling friction
4. Ball bearing	d) Increases friction

A)  $1 \rightarrow b, 2 \rightarrow a, 3 \rightarrow d, 4 \rightarrow c$       B)  $1 \rightarrow b, 2 \rightarrow d, 3 \rightarrow c, 4 \rightarrow a$   
C)  $1 \rightarrow b, 2 \rightarrow a, 3 \rightarrow c, 4 \rightarrow d$       D)  $1 \rightarrow c, 2 \rightarrow d, 3 \rightarrow a, 4 \rightarrow b$

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**SPACE FOR ROUGH WORK**

7. Which of the following statement is incorrect?  
A) Friction acts on a ball rolling along the ground  
B) Friction acts on a boat moving on water  
C) Friction acts on a bicycle moving on a smooth road  
D) Friction doesn't act on a ball moving through air
8. Part of eye which controls the entering of light is  
A) iris                      B) cornea                      C) lens                      D) retina
9. We can see a non-luminous object when the light  
A) emitted by the object falls on the eye                      B) is reflected from the object towards our eye  
C) completely passes through the object                      D) gets completely absorbed by the object
10. Which of the following is not true  
A) Air exerts friction  
B) Rise in temperature due to friction in atmosphere burns meteors  
C) corrugations on soles of shoes reduce friction  
D) none of the above
11. An electric current can produce  
A) heating effect                      B) magnetic effect                      C) chemical effect                      D) all the above
12. Which of the following solutions will not conduct electricity?  
A) Lemon juice                      B) Vinegar                      C) Tap water                      D) Vegetable oil
13. Electric bell works on the principle of  
A) chemical effect of current                      B) magnetic effect of current  
C) heating effect of current                      D) all the above
14. A body is moving with certain velocity towards east. A force of 5N is applied on it towards east and a force of 6N is applied on it towards west. Then:  
A) Speed of body increases towards east                      B) Speed of the body increases towards west  
C) Direction of the body will changes                      D) Speed of the body decreases

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**SPACE FOR ROUGH WORK**

15. The net force acting on a body of mass 1kg moving with a uniform velocity of  $5\text{ms}^{-1}$  is  
A) 5N                      B) 0.2N                      C) 0N                      D) none of the above
16. How many dynes are equal to 10N?  
A)  $10^6$                       B)  $10^5$                       C)  $10^4$                       D)  $10^3$
17. How does pressure vary when we come from mountain top to sea level?  
A) Increases                      B) Decreases                      C) Remains same                      D) Depends on weather
18. Hydraulic machines are based on  
A) Pascals law                      B) Newton law                      C) Einstein's law                      D) all the above
19. A passenger in a moving train tosses a coin which falls behind him. It means that motion of the train is  
A) Retarded                      B) Accelerated                      C) Along circular tracks                      D) uniform
20. According to third law of motion action and reaction  
A) Always act on the same body in opposite direction  
B) Always act on different bodies in opposite direction  
C) Have same magnitude and direction  
D) Act on either body at normal to each other
21. Which of the following statement is not correct for an object moving along a straight path in accelerated motion?  
A) its speed keeps changing                      B) its velocity always changes  
C) it always goes away from the earth                      D) a force is always acting on it
22. Inertia of an object tends to cause the object  
A) to increase its velocity in the same direction  
B) to decrease its speed  
C) to resist any change in its state of rest or motion  
D) to decelerate due to friction
23. A particle is moving in a circular path of radius 'r'. The displacement after half a circle would be  
A) zero                      B)  $\pi r$                       C)  $2r$                       D)  $2\pi r$

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**SPACE FOR ROUGH WORK**



33. A teacher performed the following experiment in the class. He took a small amount of lemon juice, apple juice, vinegar in three separate test tubes. He poured a drop of blue litmus in each of the test tubes. What will you notice about blue litmus?
- A) Blue litmus turns red only in lemon juice      B) Blue litmus turns red only in apple juice  
C) Blue litmus turns red only in vinegar      D) Blue litmus turns red in all the three juices
34. Which of the following is not a base?
- A) NaOH      B) KOH      C)  $\text{NH}_4\text{OH}$       D)  $\text{C}_2\text{H}_5\text{OH}$
35. Washing soda is.....
- A) Hydrated sodium carbonate      B) anhydrous sodium carbonate  
C) Hydrated magnesium sulphate      D) anhydrous magnesium sulphate
36. Aqueous solution of acetic acid is also called
- A) oil of vitriol      B) vinegar      C) epsom salt      D) none of these
37. Which of the following is a physical change?
- A) Dissolution of lime in  $\text{H}_2\text{O}$       B) Dissolution of  $\text{CO}_2$  in water at high pressure  
C) Dissolution of concentrated acid in water      D) Electrolysis of  $\text{H}_2\text{O}$
38. A change is a chemical change when it is accompanied by
- A) energy change      B) formation of new substances  
C) change in physical properties      D) all of the above are correct
39. On adding a few drops of dilute sulphuric acid to the blue vitriol (copper sulphate) solution, we get a blue coloured solution. When we drop a shaving blade into this blue coloured solution blue colour changes to green after sometime. Which type of change is illustrated by this activity?
- A) physical change      B) chemical change      C) Both of these      D) none of these
40. .... is a reversible change
- A) bud to flower      B) cow dung to biogas  
C) ice-cream to molten ice-cream      D) none of these

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SPACE FOR ROUGH WORK

41. In a displacement reaction  
 A) a more reactive element replaces a less reactive element  
 B) a less reactive element replaces a more reactive element  
 C) an element replaces one, which is equally reactive  
 D) an element can replace any other element with no relation to reactivity
42. Uniform of fireman is coated with  
 A) Teflon                      B) rayon                      C) PVC                      D) Melamine
43. Non-stick cookwares have the coating of  
 A) PET                      B) Teflon                      C) acrylic                      D) Melamine
44. The fibre obtained from plant is  
 A) silk                      B) wool                      C) cotton                      D) nylon
45. Water gas is a mixture of  
 A) CO and N<sub>2</sub>                      B) CO and H<sub>2</sub>                      C) Co and H<sub>2</sub>                      D) none of these
46. % of carbon content in peat  
 A) 90-95                      B) 50-60                      C) 75-80                      D) 60-70
47. The amount of LPG in a domestic gas cylinder is about  
 A) 14.2kg                      B) 13.2kg                      C) 12.2 kg                      D) 11.2 kg
48. What is the product of the reaction  

$$\text{N}_2 + 3\text{H}_2 \xrightarrow[200\text{atm}]{\text{Fe+Mo};450^\circ\text{C}} \dots\dots\dots$$
  
 A) Amine                      B) Ammonia                      C) Nitrogen                      D) nitrogen dioxide
49. ....is used for detect the leakage of LPG from the cylinder  
 A) methyl mercaptan      B) ethyl mercaptan      C) ethanol                      D) salicylaldehyde
50. Which of the following is not true for natural gas?  
 A) it is generally found with petroleum deposits      B) it can be liquefied under pressure  
 C) it is a rich source of hydrogen                      D) it has a low calorific value

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**SPACE FOR ROUGH WORK**

**MATHEMATICS**

51. The value of the expression

$$\frac{3}{8} + \frac{7}{2} + \frac{-3}{5} + \frac{9}{8} + \frac{-3}{2} + \frac{6}{5} \text{ is}$$

- A)  $\frac{31}{10}$                       B)  $\frac{41}{10}$                       C)  $\frac{31}{16}$                       D)  $\frac{27}{16}$

52. The difference between the largest and smallest of the fractions  $\frac{5}{8}, \frac{7}{12}, \frac{1}{3}, \frac{2}{5}$  is

- A)  $\frac{1}{4}$                       B)  $\frac{-5}{24}$                       C)  $\frac{7}{24}$                       D)  $\frac{13}{21}$

53. The product of two numbers is  $25\frac{3}{8}$ . If one of them is  $15\frac{9}{40}$ , then the other number is

- A)  $\frac{2}{3}$                       B)  $1\frac{2}{3}$                       C)  $5\frac{2}{3}$                       D)  $\frac{9}{7}$

54. A yoga instructor wants to arrange the maximum possible number of 6000 students in a ground so that the number of rows is same as the number of columns. How many rows will there be if 71 students were left out after the arrangement

- A) 80                      B) 77                      C) 76                      D) 73

55.  $\sqrt[3]{0.125} + \sqrt[3]{0.729} = n \times 0.7$  then the value of n

- A) 8                      B) 6                      C) 4                      D) 2

56. There are 90 multiple choice questions in a test. Suppose you get two marks for every correct answer and for every question you leave unattempted or answer wrongly, one mark is deducted from your total score of correct answers. If you get 60 marks in the test, then how many questions did you answer correctly?

- A) 25                      B) 30                      C) 45                      D) 50

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**SPACE FOR ROUGH WORK**



57. When a certain number  $m$  is divided by 5 and added to 8, the result is equal to  $3m$  subtracted from 4. The value of  $m$  is

- A)  $\frac{-5}{4}$                       B)  $\frac{4}{3}$                       C) 2                      D)  $-\frac{1}{3}$

58. If  $31y5$  is divisible by 15, where  $y$  is a digit, then the value of  $y$  is

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

59. The sum of 2-digit number and its reversing number is always a multiple of....

- A) 10                      B) 11                      C) 12                      D) 13

60. The value of the expression

$$84 - 7[-11x - 4\{-17x + 3(8 - 9 + 5x)\}] \text{ is}$$

- A) 84                      B)  $42x$                       C)  $-18$                       D)  $21x$

61. The product of  $3a^2 - 4ax + x^2$  and  $5x^2 - 2ax$  is

- A)  $14a^3x + 23a^2x^2 - 22ax^3 + 5x^4$                       B)  $14a^2x + 23a^3x^2 - 22ax^3 + 5x^4$   
C)  $16a^3x + 25a^2x^2 - 22x^3 + 5x^4$                       D)  $-6a^3x + 23a^2x^2 - 22ax^3 + 5x^4$

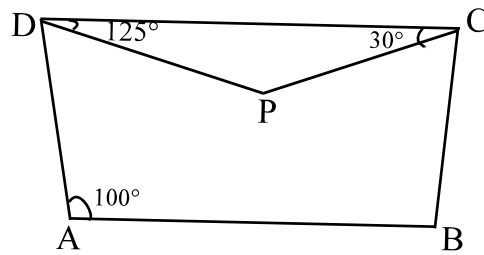
62. If  $\frac{2^x}{1+2^x} = \frac{1}{4}$ , then the value of  $\frac{8^x}{1+8^x}$  is

- A) 28                      B)  $\frac{1}{28}$                       C) 30                      D)  $\frac{1}{30}$

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SPACE FOR ROUGH WORK

63. ....  $\angle BCD$  &  $\angle ADC$  respectively, then  $\angle ABC$  is



- A)  $205^\circ$                       B)  $180^\circ$                       C)  $300^\circ$                       D)  $150^\circ$

64. The length and breadth of a rectangle are in the ratio 4:3. If the diagonal measures 25cm then the perimeter of the rectangle is  
 A) 56cm                      B) 60cm                      C) 70cm                      D) 80cm
65. If one angle of a parallelogram is  $24^\circ$  less than twice the smallest angle, then the largest angle of the parallelogram is  
 A)  $68^\circ$                       B)  $102^\circ$                       C)  $112^\circ$                       D)  $176^\circ$
66. The exterior and interior angles of n sides polygon are in the ratio 1:2. Then the number of sides of the polygon is  
 A) 4                      B) 6                      C) 8                      D) 2
67. If Lakshmi has R.600 left after spending 75% of her money, how much did she have in the beginning?  
 A) 2400                      B) 2500                      C) 2600                      D) 2700
68. A nursery has 5000 plants. 5% of the plants are roses and 1% are mango plants. What is the total number of other plants?  
 A) 4600                      B) 4700                      C) 4800                      D) 5300
69. Out of her total income Mrs. Sharma spends 20% on house rent and 70% of the rest on household expenditure. If she save Rs. 1800 what is the total income?  
 A) 7000                      B) 7250                      C) 7500                      D) 7800

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**SPACE FOR ROUGH WORK**

70. Abhay lent Rs.8000 to his friend for 3 years at the rate of 5% per annum compound interest. What amount does Abhay get after 3 years?  
 A) 9260                      B) 9261                      C) 9263                      D) 9265
71. Find the compound interest at the rate of 10% per annum for four years on the principal which in four years at the rate of 4% per annum gives Rs. 1600 as simple interest?  
 A) 2481                      B) 3541                      C) 4621                      D) 4641
72. Shyam deposited in a bank Rs. 7500 for 6 months at the rate of 8% interest compounded quarterly. Find the amount the received after 6 months  
 A) 7803                      B) 7804                      C) 7801                      D) 7805
73. The cost price of a motor cycle is 45,000. The sales tax charged is 10%. Find the bill amount?  
 A) 40, 500                      B) 54,000                      C) 50,100                      D) 49, 500
74. The value of the exppression

$$\left(x - \frac{1}{x}\right)\left(x + \frac{1}{x}\right)\left(x^2 + \frac{1}{x^2}\right)\left(x^4 + \frac{1}{x^4}\right) \text{ is}$$

- A)  $x^7 - \frac{1}{x^7}$                       B)  $x^8 - \frac{1}{x^8}$                       C) 1                      D) -1
75. The value of  
 $100x \times [0.01x^4 - 0.01x^2]$  is  
 A)  $x^5 - x^3$                       B)  $x^4 - x$                       C)  $.01x^3$                       D)  $x^3$

### **BIOLOGY**

76. The vital link that ensures continuity of species between organisms of one generation and the next  
 A) Embryo                      B) Zygote                      C) Gamets                      D) Ovule
77. In yeast, a small out growth is produced which is eventually get separated and mature into new yeast cells. That out growth are called  
 A) conidia                      B) buds                      C) Gemmule                      D) zoospores

**SPACE FOR ROUGH WORK**

78. Select one example of communicable disease  
 A) Chickenpox                      B) Cholera                      C) Tuberculosis                      D) All of these
79. Match the following  
 i) Aedes                      -1) denguevirus  
 ii) Anopheles                      - 2) Malaria  
 iii) Rust of wheat                      - 3) Bacteria  
 iv) Citrus canker                      - 4) Fungi  
 A) i-2, ii-3, iii-1, iv-4      B) i-4, ii-1, iii-4, iv-2      C) i-1, ii-2, iii-4, iv-3      D) i-1, ii-2, iii-3, iv-4
80. Causative organism of okra  
 A) Bacteria                      B) Fungi                      C) Virus                      D) Insect
81. From the following which one is an example of viral disease  
 A) Measles                      B) Typhoid                      C) Malaria                      D) Hepatitis-B
82. Who discovered the bacterium Bacillus anthracis  
 A) Robert hook                      B) Fleming                      C) Jenner                      D) Robert Koch
83. Alexander Fleming discovered penicillin in  
 A) 1927                      B) 1929                      C) 1928                      D) 1798
84. Chemical substances produced by some microbes which can kill or retard the growth of other microbes are  
 A) Antibodies                      B) Antigens                      C) Antibiotics                      D) Hormones
85. An example of bacterium which can be used in curd production?  
 A) Bacillus thuringiensis      B) Aspergillus niger                      C) Lactobacillus                      D) Trichoderma
86. Select example of endemic species from the following options  
 A) Sal                      B) Bison                      C) Wild mango                      D) All of these
87. Which of the following statement is appropriate for “Red Data Book”?  
 A) It provides data on only endangered plants  
 B) It provides data on species threatened with extinction  
 C) It provides data on extinct species  
 D) It is the list of only endangered animals

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**SPACE FOR ROUGH WORK**

88. A plant cell vacuole contains  
A) Water only  
B) Cytoplasm  
C) Air  
D) Water and dissolved substances
89. The process of removing a forest that once existed but was removed at some point of time in the past  
A) Reforestation      B) Deforestation      C) Soil erosion      D) none of these
90. Relative contribution of carbon dioxide to total global warming is  
A) 60%      B) 20%      C) 14%      D) 6%
91. Organisation responsible for maintaining Red data book / Red lists is  
A) IUCN      B) MAB      C) WWF      D) IBWL
92. Which of the following shows budding  
A) Hydra      B) Amoeba      C) Paramecium      D) Plasmodium
93. From the following which organelle is absent in plant cell  
A) plastids      B) centriole      C) vacuoles      D) mitochondria
94. Endemic plants and animals are those which are  
A) Cosmopolitan in distribution  
B) restricted to certain area  
C) found in arctic region  
D) gregarious in habit
95. Select the wrong statement from the following  
A) A fertiliser is an inorganic salt  
B) Fertilisers are very rich in plant nutrients  
C) A fertiliser provides a lot of humus to the soil  
D) A fertiliser is prepared in factories

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SPACE FOR ROUGH WORK

96. Select a traditional method of irrigation  
A) Moat                      B) Chain pumb                      C) sprinkle system                      D) Both A and B
97. Select the correct statement about the 'Drip system'  
A) These are very useful for sandy soil  
B) In this system water falls just at the position of the root  
C) It is the best technique for only watering fruit plants  
D) This system is more useful on the uneven land where sufficient water is not available
98. Bihu is associated with  
A) The grain separated from the chaff  
B) The cutting of crop  
C) is related to winnowing  
D) special festival associated with the harvest season
99. Separation of the grains from the chaff is called  
A) Silo                      B) Sowing                      C) Threshing                      D) Winnowing
100. Conduction of prepared food material from leaf to the storage organs and growing regions of the plant belongs to  
A) Phloem                      B) Xylem                      C) Xylem fibre                      D) Parenchyma

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**SPACE FOR ROUGH WORK**

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**SPACE FOR ROUGH WORK**

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**SPACE FOR ROUGH WORK**



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**SPACE FOR ROUGH WORK**

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**SPACE FOR ROUGH WORK**

**FOUNDATION - CLASS IX (STUDYING VIII) - KEY****PHYSICS**

1. B
2. D
3. D
4. B
5. B
6. A
7. D
8. A
9. B
10. C
11. D
12. D
13. B
14. D
15. C
16. A
17. A
18. A
19. B
20. B
21. C
22. C
23. C
24. D
25. C

**CHEMISTRY**

26. B
27. B
28. A
29. B
30. C
31. A
32. B
33. D
34. D
35. A
36. B
37. C
38. D
39. B
40. C
41. A
42. D
43. B
44. C
45. B
46. B
47. A
48. B
49. B
50. D

**MATHS**

51. B
52. C
53. B
54. B
55. D
56. D
57. A
58. C
59. B
60. D
61. D
62. B
63. D
64. C
65. C
66. B
67. A
68. B
69. C
70. B
71. D
72. A
73. D
74. B
75. A

**BIOLOGY**

76. B
77. B
78. D
79. C
80. C
81. A
82. D
83. B
84. C
85. C
86. D
87. B
88. D
89. A
90. A
91. A
92. A
93. B
94. B
95. C
96. D
97. B
98. D
99. C
100. A