



Brilliant STUDY CENTRE

PALA

FOUNDATION PROGRAMME **CLASS X**
SCREENING CUM SCHOLARSHIP TEST

01-11-2020

(Students who are studying in Class IX)

PHYSICS + CHEMISTRY + BIOLOGY + MATHEMATICS

Name of the Candidate :	
Mobile No. :	
E-mail Id :	
Class & Name of the School Studying :	
Roll number :	

INSTRUCTIONS

1. Please ensure stable internet connection before the commencement of the examination.
2. As this is an online exam please ensure that you have entered the personal and exam details without fail and ensure that there are 100 questions in your format.
3. The students may attend the exam from home or any other convenient place
4. Blank paper, clipboard, slide rules etc can be used for rough work.
5. Ensure that the candidate is not communicating with any other person throughout the exam duration.
6. Electronic gadgets in any form are not allowed to be used during the exam time.
7. The steady presence of the candidate in front of the system is absolutely necessary.
8. Presence of any other person near the system will not be allowed.
9. Each question has 4 possible options, of which only one is deemed as the most appropriate.
YOU ARE ASKED TO SELECT THE MOST APPROPRIATE OPTION AS THE CORRECT ANSWER.
10. Each correct answer will be awarded **FOUR** marks and one mark will be deducted for each incorrect answer. No negative marks for unattended questions.
11. Kindly be noted that your movements will be monitored under a proctoring suite and any malpractice will automatically result in the termination of the examination.

1. A man walks on a straight road from his home to market 2.5 km away with a speed of 5km/h. Finding the market closed, he instantly turns and walks back home with a speed of 7.5 km/h. The average speed of the man over the interval of time 0 to 40 min is equal to :
 A) 5 km/h B) $\frac{25}{4}$ km / h C) $\frac{30}{4}$ km / h D) $\frac{45}{8}$ km / h
2. A body moving with an initial velocity of 5m/s accelerate at 2m/s². Its velocity after 10 second is :
 A) 20m/s B) 25m/s C) 5 m/s D) 22.5 m/s
3. In circular motion the
 A) direction of motion is fixed B) direction of motion changes continuously
 C) acceleration is zero D) velocity is constant
4. The breaks applied to a scooter produces a retardation of 6m/s². If the scooter takes 2 second to stop after applying the breaks, the distance it covers during this time is :
 A) 12m B) 10 m C) 8 m D) 6 m
5. An athlete completes one round of circular track of diameter 200m in 40s. What will be the distance covered and displacement at the end of 2 minutes 20s?
 A) 2200m, 200m B) 1100m, 100m C) 4200m, 100m D) 6200m, 200m
6. The pressure which is exerted by air around us is known as :
 A) force B) atmospheric pressure
 C) muscular force D) friction
7. The force exerted by the earth to pull the object towards itself is called :
 A) electrostatic force B) gravitational force
 C) muscular force D) contact force
8. The velocity of a body of mass 20kg decreases from 20m/s to 5m/s in a distance of 100m. Force on the body is :
 A) -27.5 N B) -47.5 N C) -37.5 N D) -67.5 N

SPACE FOR ROUGH WORK

9. Frictional force is :
A) Contact force
B) Non-contact force
C) Muscular force
D) None of these
10. The velocity - time graph of a particle is not a straight line its acceleration is :
A) zero
B) constant
C) negative
D) variable
11. Choose the wrong statement :
A) unit of force is Newton
B) Force changes shape of body
C) Force is always constant
D) Force is vector quantity
12. The device used to measure potential difference between two points in an electric circuit is :
A) Voltmeter
B) Voltmeter
C) Ammeter
D) Galvanometer
13. When an object is moved away from a convex mirror, the image :
A) becomes smaller
B) moves closer to the focus
C) becomes inverted
D) Both A & B
14. The numerical value of a physical quantity is :
A) directly proportional to the magnitude of the unit selected
B) directly proportional to the square of magnitude of the unit selected
C) inversely proportional to magnitude of unit selected
D) independent of the magnitude of unit selected
15. When a 1 Newton force acts on a 1kg body that is able to move freely, the body receives :
A) an acceleration of 1m/sec^2
B) an acceleration of 98cm/sec^2
C) a speed of 1m/sec
D) an acceleration of 1cm/sec^2

SPACE FOR ROUGH WORK

16. During electrification by friction :
- A) Protons are transferred from one body to another body
 - B) Neutrons are transferred from one body to another body
 - C) Electrons are transferred from one body to another body
 - D) None of the above
17. The charge supplied to a good conductor always resides :
- A) at the supplied position itself
 - B) on its outer surface
 - C) inside the body
 - D) all the above
18. Buoyant force acting on an object is equal to the :
- A) mass of the solid immersed
 - B) weight of the solid immersed
 - C) mass of the liquid displaced by the object
 - D) weight of the liquid displaced by the object
19. If the density of iron is 7900 kgm^{-3} then its relative density is :
- A) 790
 - B) 79
 - C) 7.9
 - D) 0.79
20. A truck of mass 50,000 kg its tyres exert a pressure of 2500, 000 Pa. The surface area of tyres in contact with ground is (Take $g = 10\text{m/s}^{-2}$)
- A) 2m^2
 - B) 0.2 m^2
 - C) 2.5m^2
 - D) 2.75m^2
21. In a pressure cooker, the food cooks faster because :
- A) increased pressure lowers the boiling point of water
 - B) increased pressure raises the boiling point of water
 - C) decreased pressure raises the boiling point of water
 - D) increased pressure decrease the melting point of water

SPACE FOR ROUGH WORK

22. A girl riding a bicycle along a straight road with a speed of 5ms^{-1} throws a stone of mass 0.5kg which has a speed of 15ms^{-1} with respect to ground along her direction of motion. The mass of girl and bicycle is 50kg . What is the change in speed of the bicycle :
- A) 2ms^{-1} B) 0.1ms^{-1} C) 0.5ms^{-1} D) 5.2ms^{-1}
23. Two bodies of equal masses have kinetic energy in the ratio of $4 : 9$. The ratio of their velocity is :
- A) $3 : 2$ B) $4 : 9$ C) $2 : 3$ D) $9 : 4$
24. A device that measures current through a circuit is called :
- A) an ammeter and is always connected parallel to the circuit
B) an ammeter and is always connected in series in the circuit
C) a voltmeter and is always connected parallel to the circuit
D) a voltmeter and is always connected in series in the circuit
25. A car moving with a speed of 50km/hr can be stopped safely by brakes over a minimum distance of 6m . If it moves at a speed of 100km/h , what will be the minimum distance of stopping safely :
- A) 12m B) 18m C) 6m D) 24m
26. Cellulose is a
- A) Natural polymer made up of glucose units and fructose units
B) Natural polymer made up of glucose units
C) Natural polymer made up of sucrose units
D) Natural polymer made up of fructose units
27. When this polymer was introduced in 1939, it created a public sensation or mania. This polymer is most likely to be.
- A) Bakelite B) Teflon C) Nylon D) Terylene
28. Dacron is the most popular polyesters. Dacron is commonly known as
- A) Teflon B) Nylon C) Melamine D) Terylene

SPACE FOR ROUGH WORK

29. PVC is
- A) Poly vinyl cyanide and it is a thermoplastic
 - B) Poly vinyl carbonate and it is a thermosetting plastic
 - C) Poly vinyl chloride and it is a thermoplastic
 - D) Poly vinyl cyanide and it is a thermosetting plastic
30. X is polymer on which oil and water do not stick and Y is a polymer which does not catches fire easily. X and Y probably are respectively.
- A) Ceramic and Bakelite
 - B) Cellulose and Melamine
 - C) Teflon and Melamine
 - D) Teflon and Nylon
31. Aviation Turbine Fuel (ATF) is used in jet aircrafts. Which of the following petroleum constituent is the main component present in ATF?
- A) LPG
 - B) Kerosene
 - C) Bitumen
 - D) Diesel
32. The presence of which of the following acid is not usually observed acid rain?
- A) Nitric acid
 - B) Hydrochloric acid
 - C) Sulphuric acid
 - D) Carbonic acid
33. When Magnesium ribbon burns with a brilliant white light and leaves behind a powdery ash, which in turn forms a new substance X when dissolved in water. To the resulting solution, add two drops of phenolphthalein indicator select the correct statement from the following?
- A) The powdery ash formed is magnesium carbonate
 - B) The substance X is magnesium oxide
 - C) Solution turns pink colour
 - D) Solution remains colourless

SPACE FOR ROUGH WORK

39. Rust is chemically hydrated
A) Fe_3O_4 B) FeO C) Fe_2O_3 D) FeCO_3
40. The window locks of houses are mainly made up of Iron. The rusting of window locks becomes faster when the house is located at
A) Deserts B) River side C) Lake side D) Sea shore
41. Which of the following is used in place of coal-tar for metalling the road?
A) Coke B) Bitumen C) Naphthalene D) Coal
42. In our country, natural gas has been found in the following places except
A) Tripura B) Meghalaya C) Rajasthan D) Anthra pradesh
43. Lithium is a metal which is usually stored in a substance 'X' which is used in skin moisturising product. Identify 'X'
A) Naphthalene B) Coconut oil
C) Paraffin wax D) Lubricating oil
44. Among the following the source in nature that can be exhausted by human activities is
A) Air B) Sunlight C) Minerals D) Both A & B
45. When a copper vessel is exposed to moist air for long, it acquires a dull green coating. The green material is a mixture of
A) $\text{Cu}(\text{OH})_2$ and CuCO_3 B) CuCO_3 and Cu_2O
C) CuO and Cu_2O D) $\text{Cu}(\text{OH})_2$ and Cu_2O
46. Which of the following metal can form a colourless sulphate?
A) Cu B) Fe C) Zn D) All
47. Which of the following gas can be used in making reddish organge coloured advertising signs?
A) Argon B) Chlorine C) Neon D) Mercury

SPACE FOR ROUGH WORK

56. Which of the following is an example for in-situ conservation?
 A) Seed bank B) Sacred groves C) Zoological parks D) Botanical garden
57. The zone in biosphere reserves that is free from human intervention
 A) Core zone B) Buffer zone C) Transition zone D) Limnetic zone
58. Animals on the verge of extinction are called
 A) Vulnerable B) Threatened C) Endangered D) Rare
59. Which of the following can be used as manure:
 A) Humus B) NPK C) Urea D) Ammonium sulphate
60. 2,4-D is used as a :
 A) Weedicide B) Fungicide C) Pesticide D) Rodenticide
61. The first step before growing crops in _____ of the soil
 A) Irrigation B) Adding manure C) Sowing D) Preparation of soil
62. Match the following :
- | Column I | Column II |
|-----------------|-----------------------|
| i) Groundnut | p) Rabi crop |
| ii) Mustard | q) Kharif crop |
| iii) Moat | r) Traditional method |
| iv) Drip system | s) Modern method |
- A) i – s; ii – p; iii – r; iv – q B) i – q; ii – p; iii – r; iv – s
 C) i – p; ii – q; iii – r; iv – s D) i – p; ii – q; iii – s; iv – r
63. Gymnosperms lack:
 A) Phloem B) Sieve tubes
 C) Xylem parenchyma D) Albuminous cells

SPACE FOR ROUGH WORK

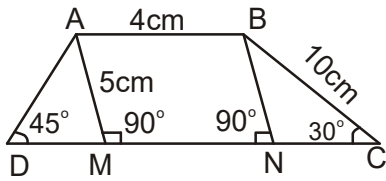
71. The membrane of vacuole is called
 A) Tonoplast
 B) Elaioplast
 C) Plasma membrane
 D) Cell membrane
72. The fallopian tube is also called
 A) Vas deferens
 B) Epididymis
 C) Oviduct
 D) Vasa recta
73. In humans, which division takes place in order to produce gametes
 A) Mitosis
 B) Meiosis
 C) Amitosis
 D) Equatorial division
74. Which of the following is an inverted pear shaped structure?
 A) Uterus
 B) Ovary
 C) Testes
 D) Zygote
75. Lizard is an example of
 A) Reptile - Viviparous
 B) Amphibian - Oviparous
 C) Reptile - Oviparous
 D) Amphibian - Viviparous
76. If $x = 7 + 4\sqrt{3}$, then the value of $x^2 + \frac{1}{x^2}$ is
 A) 193
 B) 194
 C) 195
 D) 196
77. LCM of the fractions $\frac{5}{16}$, $\frac{25}{8}$ and $\frac{15}{24}$ is
 A) $\frac{5}{48}$
 B) $\frac{5}{8}$
 C) $\frac{75}{48}$
 D) $\frac{75}{8}$
78. The value of $\frac{2^{1/2} \times 3^{1/3} \times 4^{1/4}}{10^{-1/5} \times 5^{3/5}} \div \frac{4^{-2/3} \times 5^{-7/5}}{4^{-3/5} \times 6^{-1/3}}$ is equal to
 A) 10
 B) 1
 C) 6
 D) 18

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79. The value of $\frac{5^{0.25} \times (125)^{0.25}}{(256)^{0.10} \times (256)^{0.15}}$ is
- A) $\frac{\sqrt{5}}{2}$ B) $\frac{5}{4}$ C) $\frac{25}{2}$ D) $\frac{25}{16}$
80. If 20% of 60% of number is 144, then the number is
- A) 1200 B) 2880 C) 8640 D) 3600
81. $\frac{1}{5}$ th of a flagpole is black, $\frac{1}{4}$ th is white and the remaining three meters is painted yellow. The length of the flagpole is
- A) $5\frac{5}{11}$ m B) $\frac{60}{11}$ cm C) $\frac{50}{11}$ m D) $\frac{56}{11}$ m
82. If $\frac{x-a}{b+c} + \frac{x-b}{c+a} + \frac{x-c}{a+b} = 3$ then x is equal to
- A) $\frac{a+b+c}{2}$ B) $a+b+c$ C) $2(a+b+c)$ D) $2abc$
83. The value of $\frac{3}{7} + \left(\frac{-6}{11}\right) + \left(\frac{-8}{21}\right) + \left(\frac{5}{22}\right)$ is equal to
- A) $\frac{125}{462}$ B) $\frac{-125}{462}$ C) $\frac{-129}{462}$ D) $\frac{129}{462}$
84. $\frac{1}{1+\sqrt{3}} + \frac{1}{\sqrt{3}+\sqrt{5}} + \frac{1}{\sqrt{5}+\sqrt{7}} + \dots + \frac{1}{\sqrt{34}+\sqrt{36}}$ is
- A) 0 B) $-\frac{5}{2}$ C) $\frac{6}{2}$ D) $\frac{5}{2}$

SPACE FOR ROUGH WORK

95. The area of the trapezium ABCD is



A) $\frac{5}{2}(9 + 5\sqrt{3})$ sq. cm

B) $\frac{5}{2}(13 + 5\sqrt{3})$ sq. cm

C) $\frac{5}{2}(8 + 5\sqrt{3})$ sq. cm

D) $\frac{5}{2}(10 + 5\sqrt{3})$ sq. cm

96. If $x = \frac{\sqrt{5} + \sqrt{3}}{\sqrt{5} - \sqrt{3}}$, then the value of $x^3 + \frac{1}{x^3}$ is

A) 644

B) 512

C) 488

D) 348

97. If $x - \frac{1}{x-2} = 2 - \frac{1}{x-2}$, then x is equal to

A) 1

B) 2

C) 3

D) None of these

98. The value of $\frac{0.76 \times 0.76 \times 0.76 + 0.24 \times 0.24 \times 0.24}{0.76 \times 0.76 - 0.76 \times 0.24 + 0.24 \times 0.24}$ is

A) 0.52

B) 1

C) 0.01

D) 0.1

SPACE FOR ROUGH WORK

99. The smallest number which when divided by 20,25,35 and 40 and leaves a remainder of 14,19,29 and 34 respectively is

A) 1404

B) 1664

C) 1394

D) 1406

100. The value of $\frac{(0.6)^0 - (0.1)^{-1}}{\left(\frac{3}{2^3}\right)^{-1} \left(\frac{3}{2}\right)^3 + \left(\frac{-1}{3}\right)^{-1}}$ is

A) $\frac{3}{2}$

B) $\frac{-3}{2}$

C) $\frac{2}{3}$

D) $\frac{1}{3}$

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FOUNDATION - CLASS X (STUDYING IX) - KEY

<u>PHYSICS</u>		<u>CHEMISTRY</u>		<u>BIOLOGY</u>		<u>MATHS</u>	
1.	D	26.	B	51.	B	76.	B
2.	B	27.	C	52.	C	77.	D
3.	B	28.	D	53.	A	78.	A
4.	A	29.	C	54.	A	79.	B
5.	A	30.	C	55.	A	80.	A
6.	B	31.	B	56.	B	81.	A
7.	B	32.	B	57.	A	82.	B
8.	C	33.	C	58.	C	83.	B
9.	A	34.	B	59.	A	84.	D
10.	D	35.	A	60.	A	85.	A
11.	C	36.	D	61.	D	86.	A
12.	A	37.	C	62.	B	87.	C
13.	D	38.	A,C	63.	B	88.	B
14.	C	39.	C	64.	D	89.	D
15.	A	40.	D	65.	A	90.	D
16.	C	41.	B	66.	B	91.	A
17.	B	42.	B	67.	C	92.	C
18.	D	43.	C	68.	A	93.	C
19.	C	44.	C	69.	B	94.	A
20.	B	45.	A	70.	C	95.	B
21.	B	46.	C	71.	A	96.	C
22.	B	47.	C	72.	C	97.	D
23.	C	48.	B	73.	B	98.	B
24.	B	49.	D	74.	A	99.	C
25.	D	50.	D	75.	C	100.	B