

Instructions:

- (i) Read the instruction on the MCQ Response Form carefully.
- (ii) Choose the single best answer for each question.
- (iii) Candidates are strictly prohibited from giving any identification mark except Roll No. & Signature in the specific columns only

Physics

1. One light year is equal to:

- A) $9 \times 10^{12}m$
- B) 6×10^{12}
- C) $9.5 \times 10^{13}m$
- D) None

2. Reverse process of vector addition?

- A) Subtraction
- B) Division
- C) Multiplication
- D) None

3. When a ball moves from and reaches to its maximum height in 3 seconds, what is its initial velocity?

- A) 40m/sec
- B) 35m/sec
- C) 29.4m/sec
- D) 25m/sec

4. Rocket propulsion is according to?

- A) 3rd law of motion
- B) 1st
- C) 2nd
- D) None

5. 1 Cal = _____ j

- A) 418
- B) 400
- C) 10
- D) 4.18

6. If a body of 2kg moves vertically 2m then work done is:

- A) -39.2 j
- B) 20 j
- C) 45 j
- D) 35 j

7. If the radius of circle is doubled, then centripetal force becomes:

- A) Doubled
- B) Remains same
- C) Half
- D) Reduces four times

8. Bernoulli equation is according to law.

- A) Stock's law
- B) Einstiens equation
- C) Newton's law
- D) None

9. The time period of a second pendulum from its extreme to mean position:

- A) T
- B) T/4
- C) T/2
- D) 2 sec

20. Unit of longitudinal strain is:

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- A) m
B) Unit less
C) 1/m
D) None of these

21. A completely filled band is called:

- A) Forbidden band
B) Conduction band
C) Both
D) None

22. Which of the following is used for detection of light?

- A) Reverse biased photodiode
B) Forward biased photodiode
C) Both
D) None

23. In ${}_{92}\text{U}^{235}$ the neutron to nucleon ratio is:

- A) 143/235
B) 145/235
C) 235/143
D) 92/235

24. If intensity and frequency of light is doubled, then emission of electrons is:

- A) Doubled
B) Increases four times
C) Half
D) Same

25. When effective value of current is 10. What is its peak value?

- A) 12
B) 10
C) 13
D) 14.5

26. In diodes, the graph is drawn b/w?

- A) Voltage & current
B) Voltage and intensity
C) Intensity and current
D) None

27. Speed of earth around the sun is:

- A) 29600 m/sec
B) 29000 m/sec
C) 30000 m/sec
D) None of above

28. In $v=wr$, w is called:

- A) Tangential velocity
B) Radius of circle
C) Rotational velocity
D) All

30. A bullet is fired with an angle of 30° with the velocity of 196 ms^{-1} . For how much time the bullet will remain in space?

- A) 10 s
B) 30 s
C) 20 s
D) 40 s

41. $\int x \cos x dx = ?$

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A) $x \sin x - \cos x + c$

B) $x \cos x - \sin x + c$

C) $x \sin x - \cos x - c$

D) None

43. If $x = a \cos \theta$, $y = a \sin \theta$ then $\frac{dy}{dz} = ?$

A) $-\cot \theta$

B) $\cos \theta$

C) $\tan \theta$

D) None

45. If "k" is constant then $\int k \cdot f(x) dx = ?$

A) $k \cdot \int f(x) dx$

B) $k \int f(x)$

C) $f(x)$

D) None

46. If $\frac{dy}{dx} = 2x$, then the equation becomes:

A) $y = x^2 - 2x - 3$

B) $y = x^2 - 2x + 3$

C) $y = x^2 + 2x - 3$

D) None

47. If eccentricity $e > 1$, then the figure is:

A) Ellipse

B) Parabola

C) Circle

D) Hyperbola

48. If $y^2 = 3x$, then the equation of rectum is

A) $x = \frac{3}{4}$

B) $y = \frac{4}{3}$

C) $y = \frac{1}{3}$

D) $y = \frac{5}{7}$

49. The probability of numbers greater than '4' by throwing a dice is:

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

B) 3

C) $\frac{4}{3}$

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

51. When $f(x) = \sin x$ and $x = 0$, then slope will be:

A) 1

B) -1

C) 0

D) 2

52. $R = ?$

A) $\frac{abc}{4\Delta}$

B) abc

C) $\frac{abc}{\Delta}$

D) None

53. $\sinh 2x + \cosh 2x = ?$

A) $\cosh 2x$

C) $\sinh 2x$

B) $\cosh x$

D) None

54. $\frac{1 - \cos \alpha}{\sin \alpha} = ?$

A) $\tan \alpha / 2$

B) $\cot \alpha / 2$

C) $\sin \alpha / 2$

D) None

55. If $ax^2 + 2hxy + by^2 = 0$, their lines are orthogonal when:

A) $a + b = 0$

B) $a = b$

C) $a \square b = 0$

D) None

56. The distance of a point $(10, -10)$ from origin is:

A) $10\sqrt{2}$

B) 10

C) 15

D) None

57. The A.M between 1000 and 4 is?

A) 502

B) 500

C) 402

D) 602

58. Area of Δ : in terms of sides is equal to:

A) $S(s - a)(s - b)(s - c)$

B) $S(s - a)(s - b)(s - c)$

C) $S(s + a)(s + b)(s + c)$

D) None

59. If s in $\theta < 0$ and $\cos\theta > 0$ then in which quadrant terminal sides of the angle lies?

A) 1st

B) 2nd

C) 3rd

D) 4th

60. A dice is rolled, what is the probability of getting a number greater than 4?

A) $\frac{1}{4}$

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

C) $\frac{1}{2}$

D) $\frac{1}{6}$

61. The roots of combined equations of straight line $ax^2 + 2hxy + by^2 = 0$ are real and coincident if:

- A) $h^2 \geq ab > 0$ B) $h^2 \leq ab < 0$
 C) $h^2 = ab$ D) $h^2 = \pm ab$

62. Which is universal solvent?

- A) Water B) Ether
 C) HCl D) None

63. Molarity of heavy water:

- A) 55.5 mol.dm³ B) 60.5
 C) 40.5 D) 50.5

64. Diamond is non-conductor due to:

- A) Free electrons present B) Giant structure
 C) Absence of free electron D) None

65. Which of the following is true?

- A) Na⁺ is smaller than Na B) Cl⁻ is less than Cl
 C) Na⁺ is greater than Na D) none

66. Which of the following is not alkali?

- A) Ra B) K
 C) Na D) All

67. The comparative rate at which solute moves in paper chromatography, depends upon R_F value of:

- A) Solute B) Solution
 C) Solvent D) None

68. In primary alkyl halides, hydrogen is bonded to that carbon which is attached to carbon atoms?

- A) 1 B) 3
 C) 2 D) None

69. Which of the following is least reactive?

- A) H₂O B) Alcohol
 C) Ether D) H₂SO₄

70. Which of the following is the formula of methylene chloride?

- A) CH₂Cl₂ B) CHCl₃
 C) CH₃Cl D) CCl₄

71. Which of the following has net dipole moment?

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- A) CO
- B) NH₃
- C) H₂O
- D) All of these

72. The maximum value of O₂ is at:

- A) HTP
- B) STP
- C) 127°C, 1atm
- D) None

73. The order of rate of diffusion is:

- A) SO₂>CO₂>Br₂>NH₃
- B) Br₂<SO₂<CO₂<NH₃
- C) Br₂>SO₂>CO₂>NH₃
- D) SO₂<CO₂<Br₂>NH₃

74. Oxidation of NO in air gives:

- A) N₂H₄
- B) NH₄
- C) NH₃
- D) None

75. Which of the following is used for disinfection of water?

- A) Cl₂
- B) F₂
- C) Br₂
- D) I₂

76. The planer shape is made in which type of hybridization?

- A) sp³
- B) sp²
- C) sp¹
- D) None

77. In which orbital electrons go after 6d?

- A) 7s
- B) 8s
- C) 7p
- D) 6s

78. At which point heat is absorbed without change in phase?

- A) Melting point
- B) Both
- C) Boiling point
- D) None

79. Which gives +3 charge?

- A) Al
- B) Ca
- C) Na
- D) None

80. The pH of 10⁻³ moles of HNO₃ is?

- A) 2.7
- B) 2.0
- C) 3
- D) 1.5

81. Which is not a calcareous material?

- A) Clay
- B) Marble
- C) Lime
- D) Marine shell

82. Which is synthetic polymer? www.PLSBOOST.com

- A) Polystyrene
B) Polyethylene
C) PVC
D) None

83. Which is not present abundantly in earth crust?

- A) Na
B) Al
C) Ba
D) Ca

84. Which catalyst is used to convert carboxylic acid into alcohol?

- A) NaBH_4
B) H_2SO_4
C) LiAlH_4
D) None

85. Methylated Alcohol contains:

- A) 95% alcohol
B) 90% alcohol
C) 80% alcohol
D) None

86. A single chloride free radical can destroy how many ozone molecules:

- A) 100
B) 10000
C) 100000
D) 10

87. How many zones through which the charge passes in rotary kiln?

- A) 4
B) 2
C) 3
D) 5

88. Which compound shows H-bonding?

- A) C_2H_4
B) $\text{CH}_3\text{—O—CH}_3$
C) $\text{C}_2\text{H}_2\text{Cl}$
D) $\text{C}_2\text{H}_5\text{OH}$

89. London dispersion forces exist in:

- A) In bromine water
B) In molecule of neon gas
C) In HCl
D) In molecules of CH_3Cl

90. The reactivity order of alkyl halides for particular alkyl group is:

- A) $\text{F} > \text{Cl} > \text{Br} > \text{I}$
B) $\text{I} > \text{Br} > \text{Cl} > \text{F}$
C) $\text{Cl} > \text{Br} > \text{F} > \text{I}$
D) $\text{Br} > \text{I} > \text{Cl} > \text{F}$

Spot the error in the following sentences.

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91.

This apartmentbe perfect, if it were a little larger.

A B C D

92.

He borrowed the money so he could finish his education.

A B C D

93.

The duties of the ^{new} secretary are to answer ^{the} telephone, to type letters, and book ^{Keeping} _o

94.

Daina would rather that her husband doesn't work sohard.

A B C D

Pick the correct one:

95.

- A) She drenched herself in perfume
- B) She drenched herself with perfume
- C) She drenched herself into perfume.
- D) She drenched herself in perfume.

96.

- A) A day later he reached his first glimpse of Lahore
- B) A day later he took his first glimpse of Lahore.
- C) A day later he found his first glimpse of Lahore
- D) A day later he caught his first glimpse of Lahore.

97.

- A) This has a bad impact on economy.
- B) This has a bad impact to the economy.
- C) This has a bad impact for the economy.
- D) This has a bad impact over the economy.

98.

- A) He saved him from dying of thirst
- B) He saved him for dying of thirst
- C) He saved him from dying from thirst
- D) He saved him for dying from thirst

99.

- A) They try to pacify him for kindness and affection
- B) They try to pacify him in kindness and affection.
- C) They try to pacify him by kindness and affection.
- D) They try to pacify him with kindness and affection.

100.

- A) Why did you disagree with me?
- B) Why did you disagree to me?
- C) Why did you disagree on me?
- D) Why did you disagree by me?

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