

Test Booklet

Series

**A**

Test Booklet No.

**Test Booklet**  
**Lab Assistant (Physics)**

Name of Applicant ..... Answer Sheet No. ....

Applicant ID/Roll No. : ..... Signature of Applicant : .....

Date of Examination: ..... Signature of the Invigilator(s)

1. ....

Time of Examination : ..... 2. ....

**Duration : 2 Hours]**

**[Maximum Marks : 100**

**IMPORTANT INSTRUCTIONS**

- (i) The question paper is in the form of Test-Booklet containing **100 (Hundred)** questions. All questions are compulsory. Each question carries four answers marked (A), (B), (C) and (D), out of which only one is correct. Choose the correct option or the most appropriate option.
- (ii) On receipt of the Test-Booklet (Question Paper), the candidate should immediately check it and ensure that it contains all the pages, i.e., **100** questions. Discrepancy, if any, should be reported by the candidate to the invigilator immediately after receiving the Test-Booklet.
- (iii) A separate Answer-Sheet is provided with the Test-Booklet/Question Paper. On this sheet there are **100** rows containing four circles each. One row pertains to one question.
- (iv) The candidate should write his/her Application ID/Roll number at the places provided on the cover page of the Test-Booklet/Question Paper and on the Answer-Sheet and **NOWHERE ELSE**.
- (v) No second Test-Booklet/Question Paper and Answer-Sheet will be given to a candidate. The candidates are advised to be careful in handling it and writing the answer on the Answer-Sheet.
- (vi) For every correct answer of the question **One (1) mark will be awarded**. There will be negative marking and 1/4 (0.25) mark will be deducted for every incorrect answer.
- (vii) Marking shall be done only on the basis of answers responded on the Answer-Sheet.
- (viii) To mark the answer on the Answer-Sheet, candidate should **darken** the appropriate circle in the row of each question with Blue or Black pen.
- (ix) For each question only **one** circle should be **darkened** as a mark of the answer adopted by the candidate. If more than one circle for the question are found darkened or with one black circle any other circle carries any mark, the answer will be treated as incorrect.
- (x) The candidates should not remove any paper from the Test-Booklet/Question Paper. Attempting to remove any paper shall be liable to be punished for use of unfair means.
- (xi) Rough work may be done on the blank space provided in the Test-Booklet/Question Paper only.
- (xii) *Mobile phones (even in Switch-off mode) and such other communication/programmable devices are not allowed inside the examination hall.*
- (xiii) No candidate shall be permitted to leave the examination hall before the expiry of the time.

**DO NOT OPEN THIS QUESTION BOOKLET UNTIL ASKED TO DO SO.**

Lab Assistant (Physics)

[P.T.O.

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1. What is the length of a second's pendulum where 'g' is  $980 \text{ cm/sec}^2$ ?
- (A) 78 cm (B) 88 cm  
(C) 98 cm (D) 108 cm.
2. An aeroplane travelling at a speed of 900 km/hour banks at an angle of  $45^\circ$  as it makes a turn. What is the radius of the curve?
- $g = 10 \text{ m/sec}^2$
- (A) 6.25 km (B) 9.00 km  
(C) 2.00 km (D) 4.50 km.
3. The number of vibration completed by the body in one second is known as its .....
- (A) Vibrations (B) Phase  
(C) Amplitude (D) Frequency.
4. When one end of a horizontal beam is fixed and the other end is free, it is called a .....
- (A) Uniform bar (B) Fixed bar  
(C) Cantilever (D) None of these.
5. What percentage of K.E. of a moving particle is transferred to the stationary particle, when it strike the stationary particle of equal mass?
- (A) 10% (B) 50%  
(C) 60% (D) 100%.
6. A type of flow of a fluid in which the layers of fluid glide over one another without mixing is known as .....
- (A) Streamline flow (B) Laminar flow  
(C) Turbulent flow (D) None of the above.
7. What is the capacity of a conductor when a charge of one coulomb raised its potential by one volt?
- (A) 0.2 farad (B) 0.5 farad  
(C) 1.0 farad (D)  $4 \pi$  farad.

8. What is the dielectric constant for water?  
 (A) 0.33 (B) 1.00  
 (C) 40.0 (D) 80.0.
9. Electromagnets are made of soft iron because it has .....  
 (A) High retentivity and high coercive force  
 (B) High retentivity and low coercive force  
 (C) Low retentivity and high coercive force  
 (D) Low retentivity and low coercive force.
10. If the distance between two charged bodies is halved, the force between them becomes .....  
 (A) One-half (B) One-fourth  
 (C) Double (D) Four times.
11. When we connect the two given cells in parallel the total e.m.f. of the combination is equal to  
 (A) Zero (B) Sum of the e.m.f. of both cells  
 (C) e.m.f. of the small cell (D) e.m.f. of the large cell.
12. Ratio between marked price of a Shirt to that of a Trouser is 4 : 5. Shopkeeper allowed  $d\%$  discount on the Shirt and  $(d + 18)\%$  discount on the Trouser, so that the selling price of both Shirt and Trouser become equal. If shopkeeper made a profit of  $20\%$  on Shirt and  $25\%$  on Trouser and profit made on Trouser is Rs. 384 more than that of Shirt, then find the cost price of Shirt and Trouser respectively?  
 (A) Rs. 9000 Rs. 8400 (B) Rs. 9600 Rs. 9216  
 (C) Rs. 9800 Rs. 9012 (D) Rs. 9600 Rs. 8488.
13. A shopkeeper has 15 kg of rice which costs Rs. 35/kg. if he mixes this with \_\_\_ kg of another rice costing Rs. \_\_\_\_\_/kg and sells the mixture at Rs. 36/kg and earns  $20\%$  profit. Which of the following values can we fill in the same order?  
 a. 25, 27  
 b. 20, 26  
 c. 15, 25  
 d. 10, 24  
 (A) a and c only (B) b and d only  
 (C) c only (D) a, b and c only.

14. The average of a batsman in \_\_\_\_\_ innings is 44. If his average in the first \_\_\_\_\_ innings was 42, his average in the remaining innings is 45. Which of the following values can we fill in the same order?
- a. 12, 6
  - b. 10, 4
  - c. 15, 5
  - d. 9, 3
- (A) a only (B) b and c only  
(C) c and d only (D) d only.
15. The antonym of the word 'Cheerful' is .....
- (A) winsome (B) exultant  
(C) morbid (D) livid.
16. The synonym of the word 'Dole' is .....
- (A) Amass (B) Dispute  
(C) Allocate (D) Forfeit.
17. In the following question, out of the given four alternatives, select the one which is **opposite in meaning** of the given word.
- Protract**
- (A) Delay (B) Advance  
(C) Unwise (D) Sharp.
18. The question below consists of a set of labelled sentences. These sentences, when properly sequenced form a coherent paragraph. Select the most logical order of sentences from among the options.
- P : Young boys and girls seem to have become inordinately addicted to these sites.
- Q : The parents, teachers and the government must look into the problems being caused by these networking sites and must formulate a strategy either to curb or completely stop its fast growing negative influence on the minds of our youth.
- R : Smart-phones, computers, social media, internet and networking sites such as Facebook and Twitter have become source of major distractions for students.
- S : They are thoughtlessly and uselessly wasting their precious time on these sites.
- (A) PRQS (B) RPSQ  
(C) PSQR (D) QRPS.

**19.** The question below consists of a set of labelled sentences. These sentences, when properly sequenced form a coherent paragraph. Select the most logical order of sentences from among the options.

P : E-waste is valuable as a source of secondary raw material.

Q : But it is also toxic if disposed of improperly.

R : When we talk about recycling household and work place things, we tend to ignore or are less aware of how to deal with the electrical and electronic waste (sometimes called e-waste).

S : Due to rapid technology change, obsolescent items have created a fast growing mass of electronic waste around the globe.

(A) RQPS

(B) QSPR

(C) PQSR

(D) RPQS.

**20.** Improve the bracketed part of the sentence.

She dithered every time she (make) a decision.

(A) makes

(B) had to make

(C) will make

(D) No improvement.

**21.** Improve the bracketed part of the sentence.

She emanated ebullience as she (learn) about her first rank in the exam.

(A) learnt

(B) learning

(C) had learn

(D) No improvement.

**Directions (Q. 22-24) :** Each of the following sentences has blank space and four words are given after the sentence. Select whichever word you consider most appropriate for the blank space.

**22.** The completion of the railway line has been held \_\_\_\_\_ owing to the workers' strike.

(A) off

(B) up

(C) on

(D) over.

**23.** His \_\_\_\_\_ directions misled us, we did not know which road to take.

(A) complex

(B) obscure

(C) mingled

(D) vague.

24. Let us \_\_\_\_\_ our heads together to solve this difficult problem.
- (A) join (B) bring  
(C) combine (D) put.
25. Choose the indirect speech for the sentence given below?  
He said to me, "You were reading the novel."
- (A) He told me that I was reading the novel.  
(B) He told me that I had been reading the novel.  
(C) He told me that I have been reading the novel.  
(D) He told me that I would have been reading the novel.
26. Which one among the following among States produces highest amount of mica ?
- (A) Bihar (B) Orissa  
(C) Chattisgarh (D) Andra Pradesh.
27. Which one among the following is an environment-friendly activity?
- (A) Burning of waste polythene and plastics for their disposal  
(B) Use of chemical fertilizers and pesticides to increase crop productivity  
(C) Burning of biomass as fuel  
(D) Use of biogas as fuel.
28. Consider the following statements about Rabindranath Tagore :
1. He composed a number of patriotic songs during the Swadeshi Movement.
  2. He returned his Knighthood to condemn the brutal killing of innocent people at Jalianwalla Bagh.
  3. He refused to accept the Nobel Prize conferred by the British.
- Which of the statements given above is/are correct ?
- (A) 1 only (B) 3 only  
(C) 1 and 2 only (D) 1, 2 and 3.

**29.** Arrange the following National Parks of India on the basis of their location beginning from North to South :

1. Indravati
2. Bandhavgarh
3. Bandiour
4. Kapha

Select the correct answer using the code given below :

Code :

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

**30.** Consider the following statements :

1. Red algae appear black since they do not absorb light of any wavelength.
2. Yeast is commonly used for fermentation prior to baking.
3. Olive oil is extracted from seeds of olive plants.
4. Commercially used saffron represents dried stigmas from flowers.

Which of the statements given above are correct?

- |                  |              |
|------------------|--------------|
| (A) 1, 2 and 3   | (B) 3 only   |
| (C) 2 and 3 only | (D) 2 and 4. |

**31.** Which of the following statements about democracy are correct?

1. Democracy is a government of the people, for the people and by the people.
2. Democracy is a rule of majority.
3. Democracy provides an opportunity to the people to voice their grievances in a peaceful manner.
4. Democracy always leads to disintegration of the society.

Select the correct answer using the code given below

Code :

- |                   |                      |
|-------------------|----------------------|
| (A) 1, 2, 3 and 4 | (B) 2, 3 and 4 only  |
| (C) 1 and 4 only  | (d) 1, 2 and 3 only. |



**Directions (Q. 32 & 33) :** Look at the underlined part of each sentence. Below each sentence are given possible substitutions for the underlined part. Select the most appropriate option.

32. **I would rather have** a noble enemy than a mean friend.

- (A) would more have (B) would have  
(C) will have (D) No improvement.

33. No sooner **had he completed** his first novel than he fell seriously ill.

- (A) he had completed (B) could he completed  
(C) he completed (D) No improvement.

**Directions (Q. 34 & 35) :** Each statement consists of a sentence with an underlined word followed by four words. Select the option that is **opposite in meaning** to the underlined word.

34. It was a mystery as to where the young girl had acquired such a **naive** belief.

- (A) credulous (B) childlike  
(C) wise (D) innocent.

35. Terrorists profess **fanatical** ideology.

- (A) bigoted (B) militant  
(C) moderate (D) fervid.

36. Equality before the law or equal protection of the laws within the territory of India is guaranteed under which one of the following Articles of the Constitution of India?

- (A) Article 14 (B) Article 15  
(C) Article 16 (D) Article 22.

37. Which among the following fundamental rights is/are available to non-citizens?

1. Freedom of speech
2. Protection against self-incrimination
3. Freedom of conscience
4. Non-discrimination in employment

Select the correct answer using the code given below :

- (A) 1, 2 and 3 only (B) 1, 3 and 4 only  
(C) 2 and 3 only (D) 2 only.

38. Solder is an alloy of which of the following metals?
- (A) Lead and mercury (B) Lead and antimony  
(C) Lead and copper (D) Lead and tin.
39. Ohm is a unit of measuring \_\_\_\_\_.
- (A) Resistance (B) Voltage  
(C) Current (D) None of the above.
40. The inability of a body to change its state of rest or motion is known as .....
- (A) Force (B) Momentum  
(C) Displacement (D) Inertia.
41. Which of the following is correct about magnetic field?
- (A) Magnetic field has magnitude but no direction  
(B) Magnetic field has both magnitude and direction  
(C) Magnetic field may or may not have direction  
(D) None of the above.
42. Mercury is a .....
- (A) Solid metal (B) Liquid metal  
(C) Solid non-metal (D) Liquid non-metal.
43. What is the common name of Calcium Hypochlorite?
- (A) Water (B) Bleaching powder  
(C) Baking soda (D) Baking powder.
44. Sodium Metal is kept under .....
- (A) Petrol (B) Alcohol  
(C) Water (D) Kerosene.

45. Which is the absolute temperature scale?
- (A) Celsius (B) Fahrenheit  
(C) Kelvin (D) All of these.
46. The number of ways 4 boys and 3 girls can be seated in a row so that they are alternate is .....
- (A) 12 (B) 104  
(C) 144 (D) 256.
47. Which of the following gas is liberated when a metal reacts with an acid?
- (A) Oxygen (B) Hydrogen  
(C) Carbon dioxide (D) Nitrogen.
48. What is the right way to mix water and acid?
- (A) Slowly add acid into the water while stressing the solution  
(B) Slowly add water into acid while stressing the solution  
(C) Both (A) and (B) are correct  
(D) Add acid into water quickly and shake the solution.
49. Which of the following is true about pH meters?
- (A) The electrode should be stored in purified water  
(B) They should be calibrated regularly  
(C) They can be stored in hot humid places  
(D) All above are correct.
50. Why Chronic toxicity is quite difficult to determine?
- (A) Because these is no cure for that  
(B) Effects may not be seen for years  
(C) It causes little problems  
(D) Effects can be seen immediately.

51. Fume hoods protect laboratory members from which of the following :
- (A) Bacteria (B) Viruses  
(C) Toxic volatiles (D) All the above.
52. The destruction of all micro-organisms cylinder including spores is called .....
- (A) Sanitation (B) Sterilization  
(C) Disinfection (D) None of them.
53. In a solution, 50 g of sugar is dissolved in 350 g of water. What is the concentration of the solution in terms of mass by mass percentage?
- (A) 9.3% (B) 7.01%  
(C) 12.5% (D) 11.1%.
54. As per the Diamond Symbol of chemical label, Blue represents .....
- (A) Fire hazard (B) Health hazard  
(C) Radioactivity hazard (D) Personal protective equipment.
55.  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$  : In this compound, the water molecules is called .....
- (A) Pure water (B) Water of crystallization  
(C) Soda water (D) None of these.
56. What is used to support and hold a lab crucible?
- (A) A pipestem triangle (B) A stirring rod  
(C) An evaporating dish (D) None of the above.
57. Which type of microscope used to study of living cell?
- (A) Compound microscope (B) Oil immersion microscope  
(C) Phase-contrast microscope (D) Electron microscope.
58. Which day is observed as 'Goods and Services Tax (GST) Day' every year?
- (A) 1 July (B) 2 July  
(C) 3 July (D) 4 July.

59. What was the theme of 'World Environment Day 2024'?
- (A) Land restoration, desertification and drought resilience  
(B) Beat Plastic Pollution  
(C) Ecosystem Restoration  
(D) Solution to Plastic Pollution.
60. Sela Tunnel, recently recognised as India's highest tunnel by International Book of Honour, is located in which State?
- (A) Himachal Pradesh (B) Uttarakhand  
(C) Arunachal Pradesh (D) Assam.
61. Who has become the first Indian gymnast to win a gold medal at the 2024 Asian Gymnastics Championships?
- (A) Dipa Karmakar (B) Pranati Nayak  
(C) Rucha Divekar (D) Kalpana Debnath.
62. The 2024 edition of the T20 World Cup was co-hosted by which two countries?
- (A) Australia & New Zealand (B) India & Pakistan  
(C) West Indies & United States (D) England & South Africa.
63. Who is the Finance Minister of Haryana?
- (A) Sh. Nayab Singh Saini (B) Sh. Kanwar Pal  
(C) Sh. Mool Chand Sharma (D) Sh. Jai Parkash Dalal.
64. Who is the present Governor of RBI?
- (A) Rahguram Rajan (B) Urjit Patel  
(C) Shaktikanta Das (D) D. Subbarao.
65. Which among the following can produce virtual image?
1. Converging lens
  2. Concave Mirror
  3. Flat Mirror
- Select the correct option from the codes given below :
- (A) Only 1 and 2 (B) Only 2 and 3  
(C) Only 3 (D) 1, 2 and 3.

66. Optical Fibre technology works on which of these principles of Physics?  
(A) Bernoulli's Principle (B) Newton's law of Motion  
(C) Total internal reflection of Light (D) Photoelectric effect.
67. The distance between the focus and the pole of the mirror is known as .....  
(A) Centre of Curvature (B) Focal length  
(C) Mirror number (D) Radius of curvature.
68. Atomic Number is denoted by which alphabet?  
(A) A (B) N  
(C) Z (D) E.
69. The acid used in lead storage cells is .....  
(A) Phosphoric acid (B) Hydrochloric acid  
(C) Nitric acid (D) Sulphuric acid.
70. What is the colour of  $\text{SO}_2$  gas?  
(A) Blue (B) Grey  
(C) Colourless (D) Brown.
71. Which of the following rays are most penetrating?  
(A) Beta rays (B) Alpha rays  
(C) Gamma rays (D) X-rays.
72. Two lines are said to be perpendicular if the product of their slope is equal to :  
(A) -1 (B) 0  
(C) 1 (D) 1/2.
73. Rs. 120 is distributed among A, B and C so that A's share is Rs. 20 more than B's and Rs. 20 less than C's. What is B's share?  
(A) Rs. 10 (B) Rs. 15  
(C) Rs. 20 (D) Rs. 25.

74. Ajit has a certain average for 9 innings. In the tenth innings, he scores 100 runs thereby increasing his average by 8 runs. His new average is .....
- (A) 20 (B) 21  
(C) 28 (D) 32.
75. A mixture of water and alcohol can be separated by .....
- (A) Filtration (B) Evaporation  
(C) Decantation (D) Distillation.
76. The Skull and crossbones symbol is used for which type of hazard in the lab?
- (A) Skin irritation or corrosive (B) Acute toxicity  
(C) Biohazardous infection materials (D) All the above.
77. An ignitable waste can be defined as
- (A) Waste which don't burn  
(B) Waste which can burn at relatively high temperature  
(C) Waste which can burn at low temperature  
(D) Waste which don't produce temperature.
78. Flammable materials, like alcohol, should never be dispensed or used near .....
- (A) An open door (B) An open flame  
(C) Sink (D) Another student.
79. Which piece of glassware would not give critical measurement?
- (A) Volumetric flask (B) Beaker  
(C) Extensometer cylinder (D) Graduated.
80. Which fire extinguisher is suitable for live electrical fire?
- (A) CO<sub>2</sub> (B) Liquified chemical  
(C) Water filled (D) Halm.
81. What is an equivalence point?
- (A) It is the point at which the presence of titrant equals the presence of analyte  
(B) It is the point at which the volume of titrant equals the volume of analyte  
(C) It is the point at which quantity of titrant equals to the quantity of analyte  
(D) Point at which the pH of titrant equals the pH of analyte.

- 82.** When storing chemicals, segregate .....
- (A) Flammable and combustible from oxidizer  
 (B) Oxidizing agents from reducing agents  
 (C) Pyrophoric compounds from flammables  
 (D) All the above.
- 83.** All of the following terms can be used to describe hazardous waste, *except* .....
- (A) Toxicity (B) Corrosivity  
 (C) Enzymatic (D) Flammability.
- 84.** Which one of the following is a hygienic way of disposing solid waste and is more suitable if the waste contains more hazardous material and organic content?
- (A) Composting (B) Incineration  
 (C) Oxidation (D) Subgrading.
- 85.** Approximately in how many years, the money invested at 6% per annum will become three times of original value, if the compounding is annual?
- (A) 12 years (B) 18 years  
 (C) 15 years (D) 19 years.
- 86.** In an examination, 80% of the students passed in English, 85% in mathematics and 75% in both the subjects. If 40 students failed in both the subjects, find the total number of students appeared.
- (A) 400 (B) 320  
 (C) 330 (D) 2000.
- 87.** A shopkeeper sells 25 articles @ rupees 45 after giving 10% discount and earns 50% profit. If the discount is not given the profit gained is .....
- (A) 60% (B) 60.67%  
 (C) 66% (D) 66.67%.
- 88.** World Laboratory Day is celebrated on .....
- (A) 23rd February (B) 23rd March  
 (C) 23rd April (D) 23rd May.



89. The weight of an object is due to .....
- (A) the net force acting on it
  - (B) the total of all forces acting on it irrespective of their directions
  - (C) the force that it exerts on the ground
  - (D) its inert property.
90. Which of these devices is used to increase the power of a signal?
- (A) Amplifier
  - (B) Voltage regulator
  - (C) Attenuator
  - (D) All of the above.
91. Sounds of frequencies below 20 Hz are called .....
- (A) infrasonic sound
  - (B) ultrasonic sound
  - (C) intrasonic sound
  - (D) reflected sound.
92. Which of the following is used as anesthetic?
- (A)  $\text{NH}_3$
  - (B)  $\text{NO}$
  - (C)  $\text{NO}_2$
  - (D)  $\text{N}_2\text{O}$ .
93. Which of the following is necessary for Blood clotting in humans?
- (A) Vitamin A
  - (B) Vitamin C
  - (C) Vitamin E
  - (D) Vitamin K.
94. At what temperature does a substance generally need to ignite to be classified as flammable?
- (A) Below  $0^\circ\text{C}$
  - (B) Above  $100^\circ\text{C}$
  - (C) Between  $21^\circ\text{C}$  to  $55^\circ\text{C}$
  - (D) Above  $200^\circ\text{C}$ .
95. Which of the following is not a arm of a fire triangle?
- (A) Oxygen
  - (B) Heat
  - (C) Combustible substance
  - (D) Hydrogen.

- 96.** Class B fires involve .....
- (A) Flammable and combustible liquids      (B) Electric flames  
(C) Both the above      (D) None of the above.
- 97.** Best skin antiseptic is .....
- (A) Methanol      (B) Ethanol  
(C) Tincture of iodine      (D) Phenol.
- 98.** The durable material used to make heat resistant glassware is .....
- (A) Polyethylene      (B) Soda lime  
(C) Borosilicate      (D) Polyvinyl chloride.
- 99.** Which of following register of any Laboratory should be checked every day?
- (A) Register of Consumable Stock      (B) Material Safety Data Register  
(C) Visitor Register      (D) Issue-Return Register.
- 100.** What is the standard frequency of Stock Verification in a Laboratory of an Education Institution?
- (A) Once in three years      (B) Once in every six months  
(C) Quarterly      (D) Monthly.

## ROUGH WORK

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