



SET-A

QUANTUM POTENTIAL TEST

[Quality Nurturer & Mind Utilizer Test for Potential Enhancement]

(IPEC Scholarship-Cum-Admission Test)

For

CLASS-VIII

(For VIII to IX Moving Students)

Time : 3 Hrs.]

[Maximum Marks : 270

[PAPER-2]

Please read the instructions carefully. You are allotted 5 minutes specifically for this purpose.

INSTRUCTIONS

1. The booklet is your Question Paper. Do not break the seal of this booklet before being instructed to do so by the invigilator.
2. Blank spaces and blank pages are provided in the question paper for your rough work. No additional sheets will be provided for rough work.
3. Blank papers, clipboards, log tables, slide rules, calculators, cameras, cellular phones, pagers and electronic gadgets are **NOT** allowed inside the examination hall.
4. The answer sheet, a machine-readable Optical Response Sheet (**ORS**), is provided separately.
5. On breaking the seal of the booklet check that it contains **1** pages and all the **75** questions.
6. A candidate has to write his / her answers in the ORS sheet by darkening the appropriate bubble with the help of **Black ball point pen** as the correct answer of the question attempted.
7. **Question Paper Format :**

This question paper consists of **Four Parts:**

Part-I: (Physics) - 20 Questions.

Part-II: (Chemistry) - 20 Questions.

Part-III: (Mathematics) - 20 Questions.

Part-IV: (Biology) - 15 Questions.

8. **Marking Scheme :**

Please see the marking scheme as mentioned in all sections and comprehensions.

FOR ANSWER KEY VISIT OUR WEBSITE- www.ipeeciit.com

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PART -I [Physics]

[SECTION - I]

[SINGLE CORRECT TYPE]

This section contains 5 Multiple Choice Questions. Each question has four choices (A), (B), (C) and (D) out of which ONLY ONE is correct.

[Marking Scheme: +3 marks for correct answer and -1 for wrong answer]

- A beaker containing a liquid is kept inside a big closed jar. If the air inside the jar is continuously pumped out, the pressure in the liquid near the bottom of the liquid will
(A) Increases (B) Decreases
(C) Remain constant (D) First decrease and then increase
- Which one of the following statements is correct
(A) Rolling friction is greater than sliding friction
(B) Rolling friction is less than sliding friction
(C) Rolling friction is equal to sliding friction
(D) Rolling friction and sliding friction are same
- In a medium sound travels 2 km in 3 sec and in air, it travels 3 km in 10 sec. The ratio of the wavelengths of sound in the two media is
(A) 1 : 8 (B) 1 : 18 (C) 8 : 1 (D) 20 : 9
- When sound waves travel from air to water, which of the following remains constant
(A) Velocity (B) Frequency (C) Wavelength (D) All the above
- The pressure at the bottom of a tank containing a liquid does not depend on
(A) Acceleration due to gravity (B) Height of the liquid column
(C) Area of the bottom surface (D) Density of the liquid

[SECTION - II]

[COMPREHENSION TYPE]

This section contains 6 comprehension (15 Multiple Choice Questions). Each question has four choices (A), (B), (C) and (D) out of which ONLY ONE is correct.

[Marking Scheme: +4 marks for correct answer and -1 for wrong answer]

Comprehension#1

Spider man is standing on a running train as you can see in the picture.

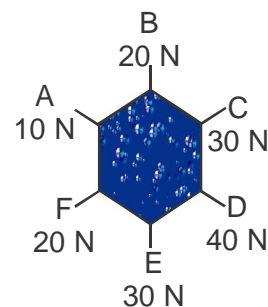


- The force which is responsible for the movement of spider man is
(A) muscular force (B) static friction (C) kinetic friction (D) rolling friction
- The force acting between wheel of the train and the railway track is
(A) gravitational force (B) static friction (C) kinetic friction (D) rolling friction
- If Spider man start running on the roof of the train then the force responsible for it's motion will be
(A) muscular force (B) static friction (C) kinetic friction (D) rolling friction

(Space for rough work)

Comprehension#2

Six students are trying to shift a table as shown in the figure. Every one apply force in the direction away from the centre of table as shown.



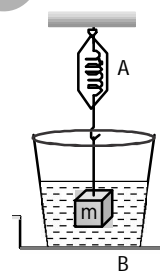
9. In which direction the table will move
 (A) towards A (B) towards C
 (C) towards E (D) will remain at rest
10. If the students at D stop exerting force then the table will move towards
 (A) towards A (B) towards C
 (C) towards E (D) will remain at rest
11. What will be the magnitude of net force in the above case
 (A) 10 N (B) 20 N (C) 30 N (D) 40 N

Comprehension#3

A block of mass 2 kg is hanged on the hook of a spring balance as shown.



After then the block is dipped in to a bucket fill with water. When a Solid body is dipped in to a fluid , the fluid exerts an upward force on the body called force of buoyancy .

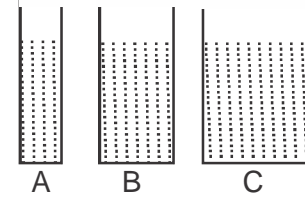


12. Reading of the spring balance before the body was immersed is
 (A) 2 kg (B) more than 2 kg
 (C) less than 2 kg (D) zero
13. Reading of the spring balance after the body was immersed is
 (A) 2 kg (B) more than 2 kg (C) less than 2 kg (D) zero
14. The direction of force of buoyancy is
 (A) from A to B (B) from B to A
 (C) at an angle 30° (D) can not be determined

(Space for rough work)

Comprehension#4

Four vessels are filled with water up to the same level as shown in the figure.



15. For which vessel pressure will be maximum at the bottom
 (A) Vessel A (B) Vessel B
 (C) Vessel C (D) Value will be equal for all
16. If water is replaced by honey in vessel B and by Milk in vessel C then for which vessel pressure will be maximum at the bottom
 (A) Vessel A (B) Vessel B
 (C) Vessel C (D) Value will be equal for all

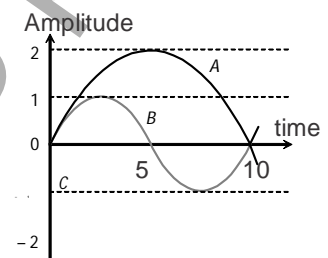
Comprehension#5

Sonography is a imaging technique based on the application of ultrasound. Ultrasound is sound waves with frequencies which are higher than those audible to humans ($>20,000$ Hz). The sound echoes off the tissue; with different tissues reflecting varying degrees of sound. These echoes are recorded and displayed as an image to the operator. In a hospital ultrasonic scanner is used to locate tumours in a tissue. The operating frequency of the scanner is 4.2 MHz. The speed of sound in a tissue is 1.7 km-s^{-1} and in air it is 330 m/s .

17. The maximum audible wavelength is about
 (A) 0.2 cm (B) 5 cm (C) 2 metre (D) 16 mm
18. The wavelength of sound in the tissue is close to
 (A) $4 \times 10^{-4} \text{ m}$ (B) $8 \times 10^{-3} \text{ m}$ (C) $4 \times 10^{-3} \text{ m}$ (D) $8 \times 10^{-4} \text{ m}$

Comprehension#6

The Amplitude-time graphs for two sound waves A and B are shown in the figure, amplitude is given in millimetre and time in millisecond



19. Frequency of sound wave A is
 (A) 10 Hz (B) 50 Hz
 (C) 30 Hz (D) 20 Hz
20. The ratio of their loudness I_A / I_B is equal to
 (A) $4 : 1$ (B) $16 : 1$ (C) $1 : 2$ (D) $1 : 1$

(Space for rough work)

PART -II [Chemistry]

[SECTION - I]

[SINGLE CORRECT TYPE]

This section contains 5 Multiple Choice Questions. Each question has four choices (A), (B), (C) and (D) out of which ONLY ONE is correct.

[Marking Scheme: +3 marks for correct answer and -1 for wrong answer]

21. Which of the following is not a common property of plastics?
(A) Non-reactive (B) Durable
(C) Light in weight (D) Good conductor of electricity
22. PET is a familiar form of
(A) Plastic (B) Polyester (C) Acrylic (D) Rayon
23. Pick up the correct statement:
(A) All ores are minerals (B) All minerals are ores
(C) A mineral cannot be an ore (D) An ore cannot be a mineral
24. Reactivity order of the mentioned metal is
(A) Sodium > Magnesium > Zinc > Iron > Copper
(B) Sodium > Magnesium > Iron > Copper > Zinc
(C) Sodium > Magnesium > Zinc > Copper > Iron
(D) Sodium > Magnesium > Copper > Iron > Zinc
25. Petroleum is found
(A) on the surface of the earth (B) in the atmosphere
(C) in arctic region (D) deep under the surface of the earth.

[SECTION - II]

[COMPREHENSION TYPE]

This section contains 6 comprehension (15 Multiple Choice Questions). Each question has four choices (A), (B), (C) and (D) out of which ONLY ONE is correct.

[Marking Scheme: +4 marks for correct answer and -1 for wrong answer]

Comprehension#1

Polyester is a synthetic fibre. Fabrics made from this fibre do not get wrinkled easily. It remains crisp and easy to wash. Hence it is quite suitable for making dress materials. It can be mixed with a natural fibre to give a blended fibre which has properties of both the fibres.

26. Mark the correct statement.
(A) Nylon is same as polyester (B) Terylene is polyester
(C) Acrylic is same as polyester (D) Polyester is biodegradable.

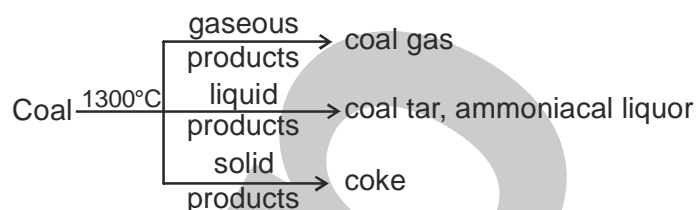
(Space for rough work)

27. Which of the following fibres will absorb minimum amount of water?
(A) Polyester (B) Wool (C) Silk (D) Cotton
28. Terrycot is a blended fibre which is made by mixing
(A) cotton and wool (B) silk and cotton
(C) terylene and cotton (D) terylene and wool

Comprehension#2

Metals and non-metals react with oxygen to give oxides at different rates. The oxides formed by metals are basic in nature while oxides formed by non-metals are acidic in nature. The nature of oxides can be determined by testing the aqueous solution of oxide with litmus paper.

29. The oxides of non-metals are acidic oxides because they dissolve in water to give.....
(A) alkalis (B) acids (C) carbonates (D) sulphates
30. Phosphorus is burnt in air to give phosphorus pentoxide. It is dissolved in water and tested with litmus paper. Mark the correct observation.
(A) Red litmus paper turns blue. (B) Blue litmus paper turns red.
(C) There is no change in the litmus paper (D) Red litmus paper changes to green.
31. Magnesium ribbon on burning in air gives a white powder which when dissolved in water turns red litmus blue. The reason for this change is that
(A) MgO is basic oxide (B) MgO is an acidic oxide
(C) MgO is a very reactive oxide (D) MgO is not a reactive oxide

Comprehension#3

32. Coke burns without smoke and does not cause air pollution because
(A) products other than carbon are removed from it. (B) it is porous and solid
(C) it is light and black in colour. (D) it has lot of impurities in it.
33. Mark the correct statement:
(A) Coal gas can be condensed back to give coal.
(B) Coal gas is obtained as a gaseous product during destructive distillation of coal.
(C) Coal tar ammoniacal liquor are useless products.
(D) Coke starts burning when exposed to air

(Space for rough work)

34. The most important use of coal tar is
 (A) source of aromatic hydrocarbons (B) a good reducing agent for extraction of iron
 (C) used as a fuel (D) for making shoe polish

Comprehension#4

The characteristics of different fibres are listed as

W: I am strong, elastic, light and burn slowly.

I shrink on heating and form hard beads with smell of burning hair.

X: I burn completely leaving no residue.

Y: I can be woven like silk fibres and dyed in a wide variety of colours.

I burn quickly with a smell of burning paper.

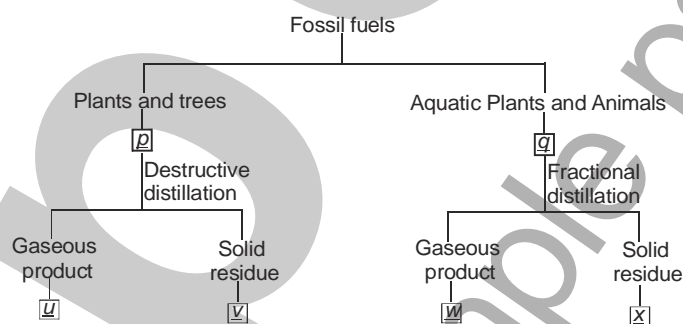
Z: I do not get wrinkled easily.

I burn slowly and produce black smoke.

35. W & X are respectively
 (A) Terylene and rayon (B) Bakelite and nylon
 (C) Melamine and PVC (D) Nylon and Cotton
36. Y and Z are respectively
 (A) rayon and polyester (B) cotton and nylon
 (C) rayon and cotton (D) Nylon and rayon

Comprehension#5

The classification of the fossil fuels



37. p, u and v are respectively
 (A) Petroleum, Coal and Bitumen (B) Coal, Coal gas and Coke
 (C) Coal, Coal gas and Charcoal (D) Petroleum, Gasoline and Bitumen
38. q, w and x are respectively
 (A) Petroleum, petroleum gas and Bitumen (B) Coal, Coal gas and Coke
 (C) Petroleum, Gasoline and Coal tar (D) Coal, Natural gas and Coke

(Space for rough work)

Comprehension#6

When a copper vessel is exposed to moist air for long, it acquires a dull green coating. The reaction can be represented as $2\text{Cu} + \text{W} + \text{X} + \text{Y} \longrightarrow \text{Cu}(\text{OH})_2 + \text{Z}$
moist air

39. W, X and Y are respectively

(A) N_2 , CO_2 and O_2

(B) H_2O , N_2 and CO_2

(C) H_2O , CO_2 and O_2

(D) H_2O , N_2 and O_2

40. Z is

(A) CuO

(B) O_2

(C) Cu_2O

(D) CuCO_3

PART -III [Mathematics]**[SECTION - I]****[SINGLE CORRECT TYPE]**

This section contains 5 Multiple Choice Questions. Each question has four choices (A), (B), (C) and (D) out of which ONLY ONE is correct.

[Marking Scheme: +3 marks for correct answer and -1 for wrong answer]

41. The value of $\sqrt{64 \times 225}$ is

(A) 150

(B) 140

(C) 130

(D) 120

42. The square root of 1584.04 is

(A) 39.8

(B) 41.8

(C) 43.8

(D) 45.8

43. By what least number should 9720 be multiplied to get a perfect cube .

(A) 15

(B) 25

(C) 5

(D) 75.

44. $\frac{16}{9} \times \left(-1\frac{1}{2}\right)^3 = \text{_____}$.

(A) -12

(B) -6

(C) $-\frac{8}{3}$

(D) $\frac{8}{9}$

45. The edge of a cube is increased by 100%. The surface area of the cube is increased by

(A) 100%

(B) 200%

(C) 300%

(D) 400%

(Space for rough work)

[SECTION - II]

[COMPREHENSION TYPE]

This section contains 6 comprehension (15 Multiple Choice Questions). Each question has four choices (A), (B), (C) and (D) out of which ONLY ONE is correct.

[Marking Scheme: +4 marks for correct answer and -1 for wrong answer]

Comprehension#1

If $\frac{a}{b}, \frac{c}{d}$ and $\frac{e}{f}$ are any three rational numbers, then $\frac{a}{b} \times \left(\frac{c}{d} + \frac{e}{f} \right) = \frac{a}{b} \times \frac{c}{d} + \frac{a}{b} \times \frac{e}{f}$

46. $\frac{2}{3} \times \frac{-7}{10} + \frac{-2}{3} \times \frac{8}{9} = ? \times \left[\frac{-7}{10} + ? \right]$

(A) $\frac{2}{3}, \frac{8}{9}$

(B) $\frac{-2}{3}, \frac{-8}{9}$

(C) $\frac{-2}{3}, \frac{8}{9}$

(D) $\frac{2}{3}, \frac{-8}{9}$

47. Name the property used above

(A) Commutativity of multiplication over addition

(B) Commutativity of addition over multiplication

(C) Distributivity of multiplication over addition

(D) Distributivity of addition over multiplication

48. $\frac{2}{5} \times \frac{-8}{9} + ? \times \frac{5}{9} = \frac{2}{5} \times [? + ?]$

(A) $\frac{2}{5}, \frac{-8}{9}, \frac{5}{9}$

(B) $\frac{2}{5}, \frac{8}{9}, \frac{-5}{9}$

(C) $\frac{-2}{5}, \frac{-8}{9}, \frac{-5}{9}$

(D) $\frac{-2}{5}, \frac{-8}{9}, \frac{5}{9}$

Comprehension#2

A rectangle has a perimeter of 60 cm,

49. If length and breadth of rectangle is $(k+4)$ cm and $(3k-2)$ cm respectively, then value of k is

(A) 7

(B) 9

(C) 12

(D) 29

50. The length and breadth of the rectangle is

(A) 11, 7

(B) 11, 19

(C) 19, 20

(D) 23, 11

51. If perimeter of rectangle is equal to perimeter of square, then side of square is

(A) 60 cm

(B) 18 cm

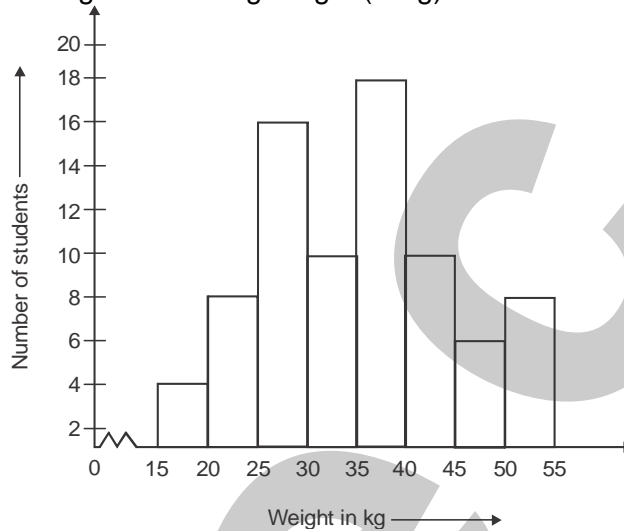
(C) 225 cm

(D) 15 cm

(Space for rough work)

Comprehension#3

Given below is the histogram showing weight (in kg) of the students of VIII class in a school.



Study the histogram and answer the following questions.

52. How many students have been observed ?
 (A) 20 (B) 55 (C) 40 (D) 80
53. What is the class size ?
 (A) 15 (B) 10 (C) 5 (D) 55
54. How many students weight less than 35 kg ?
 (A) 38 (B) 24 (C) 16 (D) 18

Comprehension#4

Measure of each exterior angle of a regular polygon of n sides = $\left(\frac{360}{n}\right)^\circ$

55. The measure of each exterior angle of a 10 sided regular polygon is
 (A) 36° (B) 30° (C) 18° (D) 35°
56. If measure of an exterior angle is 45° , the number of sides in a regular polygon is
 (A) 7 (B) 11 (C) 10 (D) 8

Comprehension#5

Three numbers are in the ratio 2 : 3 : 4.

57. The sum of their cubes is 33957. Find the numbers .
 (A) 2, 4, 8 (B) 14, 21, 28 (C) 6, 9, 18 (D) 5, 10, 15

(Space for rough work)

58. The cubes of these numbers are
 (A) 8,64,512 (B) 2744,7261,8849
 (C) 2744,9261,21952 (D) 7261,125,1000

Comprehension#6

When a is the side of a square, its area is given by a^2 . Area of a square plot is 2304 m².

59. The side of the square plot is
 (A) 42 m (B) 48 m (C) 46 m (D) 50 m
60. If the area of a square is increased by 3172 units, then the new side of the square will be
 (A) 78 m (B) 76 m (C) 72 m (D) 74 m

PART -IV [Biology]

[SINGLE CORRECT TYPE]

This section contains 15 Multiple Choice Questions. Each question has four choices (A), (B), (C) and (D) out of which ONLY ONE is correct.

[Marking Scheme: +3 marks for correct answer and -1 for wrong answer]

61. One edible Fungi
 (A) Alternaria (B) Mushroom (C) Peziza (D) Yeast
62. Winnowing is a method of
 (A) Irrigation (B) Fertilization
 (C) Separative gains from chaff & hay (D) None
63. Sowing of seeds by hand is known as
 (A) Drilling (B) Irrigation (C) Winnowing (D) All
64. Name one rabi crop
 (A) Cotton (B) Maize (C) Rice (D) Wheat
65. Name one Kharif crop
 (A) Rice (B) Cotton (C) Wheat (D) Maize
66. The plants that live for two years are called
 (A) Perennials (B) Biennials (C) Animals (D) Pentagonalis
67. Give one example of cereal crop
 (A) Rice or Wheat (B) Mango & Apple (C) Cotton & Jute (D) Pea & Grain
68. Nodules are found in the roots of which plants.
 (A) Cereal plant (B) Fiber plant (C) Leguminous plant (D) Oil plant

(Space for rough work)

69. Name one viral Disease
(A) Polio or Pox or Influenza (B) Thyphoid
(C) Diphtheria (D) Amoebic Dysentry
70. Name one Protozoan Disease
(A) Pox (B) Elephantiasis or Amoebic Dysentry
(C) Polio (D) Chloera
71. Micro organism growing in extreme hot condition is called.
(A) Exothermic (B) Cismonstic (C) Endothermic (D) Seismonsty
72. Name one unicellular Algae.
(A) Ulothri (B) Volvox (C) Chlamydomonas (D) Chara
73. Which is a renewable natural resource?
(A) Water (B) Soil (C) Oil (D) Minerals
74. The release of CO₂ into Air can cause
(A) Global warming (B) Water Pollution
(C) Air Pollution (D) Sound Pollution
75. Give one cause of Soil erosion.
(A) Deforestation (B) Silviculture
(C) Aforestation (D) Horticulture

(Space for rough work)



SET-A

QUANTUM POTENTIAL TEST

[Quality Nurturer & Mind Utilizer Test for Potential Enhancement]

(IPEC Scholarship-Cum-Admission Test)

For

CLASS-VIII

(For VIII to IX Moving Students)

Time : 3 Hrs.]

[Maximum Marks : 270

[PAPER-2]

(SAMPLE PAPER) ANSWER KEY

- | | | | | |
|---------|---------|---------|---------|---------|
| 1. (B) | 2. (B) | 3. (D) | 4. (B) | 5. (C) |
| 6. (B) | 7. (D) | 8. (B) | 9. (D) | 10. (A) |
| 11. (D) | 12. (A) | 13. (C) | 14. (B) | 15. (D) |
| 16. (B) | 17. (D) | 18. (A) | 19. (B) | 20. (A) |
| 21. (D) | 22. (B) | 23. (A) | 24. (A) | 25. (D) |
| 26. (B) | 27. (A) | 28. (C) | 29. (B) | 30. (B) |
| 31. (A) | 32. (A) | 33. (B) | 34. (A) | 35. (D) |
| 36. (A) | 37. (B) | 38. (A) | 39. (C) | 40. (D) |
| 41. (D) | 42. (A) | 43. (D) | 44. (B) | 45. (C) |
| 46. (D) | 47. (C) | 48. (A) | 49. (A) | 50. (B) |
| 51. (D) | 52. (D) | 53. (C) | 54. (A) | 55. (A) |
| 56. (D) | 57. (B) | 58. (C) | 59. (B) | 60. (D) |
| 61. (B) | 62. (C) | 63. (A) | 64. (D) | 65. (A) |
| 66. (B) | 67. (A) | 68. (C) | 69. (A) | 70. (B) |
| 71. (A) | 72. (C) | 73. (D) | 74. (A) | 75. (A) |