

PACE - IIT & MEDICAL

Delhi/ Ghaziabad /Mumbai/ Pune / Goa/ Akola/ Nashik/ Kolkatta / Lucknow / Bokaro/ Dubai

Admission cum Scholarship Test for SUPER-50

Standard: 7th

HINTS & SOLUTIONS

*
Attend "CAREER GUIDANCE SEMINAR for IIT-JEE & MEDICAL" by:
Mr. Sandeep Singhal (B. Tech, IIT-R) & Mr. Vipin Tyagi (B. Tech, IIT-BHU)
Along with our faculty team & Previous years PACE toppers

Introduction of **PACE - OLLAA**

PACE - Online Learning & Adaptive Assessment

To assist you with new JEE Main Pattern

Learning through Apps in association with Edu is Fun

www.eduisfun.com/our-games | Mob. 09029644859

on

Sunday, 16th December 2018 | 12:30 to 02:30 pm

at

Citrus Hotel (Apple tree) Ghaziabad, C/2, Mahaluxmi Mall,

Rajnagar District Centre, Gzb

* At walking Distance of 5 mins. from PACE RDC CENTRE

Followed by Tea & Snacks

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H.O: 2- Floor, C-8 & 9, Raj Nagar Gzb, Tel.: 0120-4561662/9582633559, 9999961600 www.iitianspace.com | pacerdc@gmail.com

1. (b)

2. (a)

$$\left(\frac{1}{2} + \frac{1}{3}\right)^2 = \frac{25}{36}$$

3. (b)

$$(64)^{-\frac{1}{4}} = \frac{1}{5}$$

4. (b)

5. (c)

6. (d)

$$\frac{\frac{1}{4} + \frac{3}{2}}{\frac{1}{4} - \frac{3}{2}} = \frac{\frac{14}{4}}{\frac{-10}{4}} = \frac{-7}{5}$$

7. (c)

$$\text{Mean} = \frac{2+3+5+7}{4} = \frac{17}{4} = 4.25$$

8. (b)

Let five observations are x_1, x_2, x_3, x_4, x_5

$$x_1 + x_2 + x_3 + x_4 + x_5 = 75 \quad \dots\dots(1)$$

$$x_1 + x_2 + x_3 = 42 \quad \dots\dots(2)$$

$$x_3 + x_4 + x_5 = 51 \quad \dots\dots(3)$$

find x_3 by solving these three equations.

9. (a)

10. (c)

$$\frac{50}{1.25} = 40$$

11. (a)

$$\text{Probability} = \frac{\text{fav. outcome}}{\text{total outcome}}$$

Total vowels are 5.

$$\text{So, probability} = \frac{5}{26}$$

12. (b)

Total balls = 7

$$\text{Probability} = \frac{3}{7}$$

13. (b)

$$\text{Probability} = \frac{1}{6}$$

14. (c)

$$\text{Mean} = \frac{9+18+27}{3} = \frac{54}{3} = 18$$

15. (a)

Using the sum of two angles in supplementary is 180° .

16. (b)

$$a + b = 90$$

$$2x + 3x = 90$$

$$5x = 90$$

$$x = 18^\circ$$

$$b + c = 180^\circ$$

$$54 + c = 180^\circ$$

$$C = 180^\circ - 54$$

$$C = 126^\circ$$

17. (a)

$$k = (3x^3 + x^2 + 6) - (x^3 + 3x - 8)$$

Solve it.

18. (a)

$$\text{Area} = (3p + 5q)(5q - 7q)$$

$$= 15p^2 + 4pq - 35q^2$$

19. (b)

$$\left(\frac{3x}{4} - \frac{4y}{3}\right)^2 = \frac{9x^2}{16} + \frac{16y^2}{9} - 2xy$$

20. (d)

$$\left(x - \frac{1}{x}\right)^2 = x^2 + \frac{1}{x^2} - 2 \Rightarrow x^2 + \frac{1}{x^2} = 6 + 2 = 8$$

SECTION - II (Science)

21. (d)

Thermometer is used to measure temperature. Temperature is the degree of hotness or coldness in the body.

22. (b)

Work is a scalar quantity as it has magnitude but no direction.

23. (b)

It is zero by work energy theorem. Kinetic energy doesn't change.

24. (b)

Kinetic energy $\propto p^2$

percentage increase in kinetic energy = $2 \times$ % increase in p

$$= 2 \times 0.01$$

$$= 0.02\%$$

25. (c)

$W = q\Delta V$ [since every point of a conductor is at same potential i.e. $\Delta V = 0$]

$$W = 0J$$

26. (b)

$$P_1 = \frac{V_1^2}{R} \rightarrow R = \frac{V_1^2}{P_1}$$

$$R = \frac{220 \times 220}{100} = 484\Omega$$

$$P_2 = \frac{V_2^2}{R} = \frac{110 \times 110}{484} = 25W$$

27. (a)

Heat is the form of energy that flows from a hotter body to a colder body as a result of temperature difference.

28. (b)

Brass is mixture as it is an alloy of copper and zinc.

29. (b)
Lactose gets converted into lactic acid in sour milk.
30. (d)
Sulphuric acid is called king of acids as it is a very strong acid and is highly corrosive .
31. (c)
Formic acid also known as methanoic acid (HCOOH) occur naturally most notably in some ants
32. (b)
blue litmus paper turns red under acidic conditions.
33. (a)
Sublimation is the transition of a substance directly from the solid to the gas phase without passing through intermediate liquid phase. Ex. - Iodine, camphor.
34. (d)
Mercury is the only metal that is liquid at normal temperatures and pressure.
35. (b)
Saliva contains enzyme "ptyalin" which convert starch into simple sugars.
36. (d)
Nutrition includes - " Ingestion", Digestion, Absorption, Assimilation and Egestion.
37. (a)
Ascorbic acid is another name of vitamin "C"
38. (b)
Pitcher plants are specialized to grow in nitrogen poor soils, they obtain nitrogen from insect prey.
39. (c)

$$6\text{CO}_2 + 12\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 + 6\text{H}_2\text{O}$$

Carbon-dioxide
(Glucose)
40. (c)
Fungi shows saprophytic mode of nutrition thus they get its food from dead and decaying matter.

SECTION - III (Mental Ability)

41. (b)
isn chp irq → attacking the enemy
 rst qsh isn → enemy is retreating
42. (c)
 isn chp irq → attacking the enemy
irq rst ofl → attacking and retreating.
43. (a)
rst qsh isn → enemy is retreating
 irq rst ofl → attacking and retreating
44. (d)
 Applying pythagoras' theorem, $\sqrt{3^2 + 4^2} = 5$
45. (c)
 Rotate clock 45° anticlockwise
46. (a)
47. (d)
48. (b)
49. (a)
 Count individually number of single rectangles, rectangles composed of two figures and so on.
50. (c)
 Rotate the image about y - axis