Pinnacle EduCare
Dream it • Do it
JEE / NEET / Olympiads / NTSE / Boards

P-TQE 2025
Pinnacle Talent Quest Exam
For 6th to 10th Class Students
STAGE - 1 & STAGE - 2

Pinnacle Talent Quest Exam

SAMPLE TEST PAPER

Class 9th

What Makes Pinnacle Unique?

1. Best Faculty Team
2. Hi-Tech Classrooms
3. Customized Study material
4. Personal Attention
5. Unlimited Doubt Sessions
6. Best Testing Methodology

Lecture Recording Lab

Revision Classes & Self Study Zones

Online Testing Lab (CBT)

Smart & AC Classrooms

Objective + Subjective

Student Performance and Analysis Report

Rich Library & Researched Study Modules

Extra Support to weaker students

CCTV Campus

Biometric Attendance

Classroom Program

1 Comprehensive Classroom Lectures

All classes at Pinnacle are conducted by highly qualified and experienced faculty members, mostly IITians. Each chapter is started at the grass root level and is dealt to an extent which is the requirement of competitive examinations, with an aim of enabling the students to develop a comprehensive view of the whole chapter with a thorough understanding.

Doubt Clearance 2

"If you ask a question, you may apprear fool for some time, but if you don't, you'll remain a fool for whole life."System at Pinnacle encourages all students to ask their doubts and questions.

3 Regular Tests Online and Offline

As JEE Mains and Advanced have gone completely online and NEET is in the pipeline, we have launched a dedicated online testing platform where students can practise over CBT (Computer Based Tests). The combination of online and offline testing modes based on latest JEE/NEET patterns ensure that students are at par with the recent changes. Students and check their test reports and performance analysis via a unique online login ID. Their results are also communicated to parents via SMS.

Addressing the Board Exam 4

Pinnacle has a very distinct methodology for preparing the students for competitive examinations while in full synchronization with Board Exams as well. Board level tests are conducted alongside the regular JEE/NEET tests and the copies are graded at very meticulous level by teachers. Students receive methodological tips so as to perform excellent in the board Exams as well.

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JEE / NEET / Olympiads / NTSE / Boards

Engineering
JEE Main & Adv.

Medical
NEET

Foundation
VIII, IX, X, NTSE, Olympiads

Subjective
Boards

Section – A
Science

1. Velocity – time (v – t) graph for a moving object is shown in figure. Total displacement of the object during the time interval when there is non – zero acceleration and retardation is:
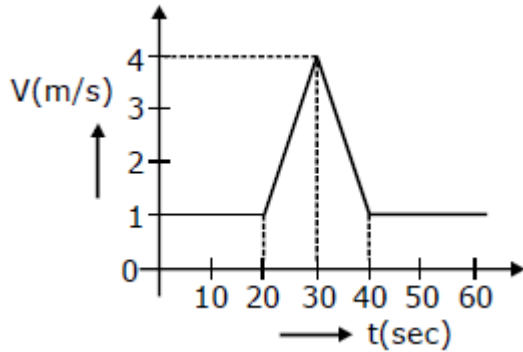
   (a) 60 m
   (b) 50 m
   (c) 30 m
   (d) 40 m

2. A particle moving in a straight line covers half the distance with speed of 3 m/s. The other half of the distance is covered in two equal time intervals with speed of 4.5 m/s and 7.5 m/s respectively. the average speed of the particle during this motion is:
   (a) 4.0 m/s
   (b) 5.0 m/s
   (c) 5.5 m/s
   (d) 4.8 m/s

3. A body is just floating on the surface of a liquid. The density of the body is same as that of the liquid. The body is slightly pushed down. What will happen to the body?
   (a) It will slowly come back to its earlier position
   (b) It will remain submerged, where it is left
   (c) It will sink
   (d) It will come out violently

4. A particle moves on a rough horizontal ground with some initial velocity v_0. If $\left(\dfrac{3}{4}\right)^{th}$ of its kinetic energy is lost due to friction in time t_0 then coefficient of friction between the particle and the ground is:

   (a) $\dfrac{v_0}{2gt_0}$

   (b) $\dfrac{v_0}{4gt_0}$

   (c) $\dfrac{3v_0}{4gt_0}$

   (d) $\dfrac{v_0}{gt_0}$

5. An apple falls from a tree because of gravitational attraction between the earth and apple. If F_1 is the magnitude of force exerted by the earth on the apple and F_2 is the magnitude of force exerted by apple on earth, then
   (a) F_1 is very much greater than F_2
   (b) F_2 is very much greater than F,
   (c) F_1 is only a little greater than F_2

(d) F_1 and F_2 are equal

6. A car covers first half part of its journey with a velocity v_1 and the remaining part of the distance was covered in time t. The remaining distance was covered with velocity v_2 for $\dfrac{1}{3}$ rd of time t and with velocity v_3 for the next $\dfrac{2}{3}$ rd of time t. then

(a) The average velocity of car of whole journey is $\dfrac{2v_1(v_2 + 2v_3)}{3v_1 + v_2 + 2v_3}$

(b) The average velocity of car of whole journey is $\dfrac{v_1(v_2 + v_3)}{3v_1 + v_2 + v_3}$

(c) The ratio of time taken by car in first half distance to time taken by car in next half distance is $\dfrac{v_2 + 2v_3}{3v_1}$

(d) The ratio of time taken by car in first half distance to time taken by car in next half distance is $\dfrac{2v_1 + v_2}{3v_3}$

7. Which of the following statements are true for displacements?
    (a) It can be zero
    (b) It cannot be zero
    (c) Its magnitude is greater than distance travelled
    (d) Its magnitude is lesser than distance travelled

8. A cheetah the fastest animal can achieve a peak value of velocity 100 km/h upto a distance less than 500 m. If a cheetah spots his prey at a distance of 100 m, what is the minimum time it will take to get its prey?

9. For how long should a force of 100 N act on a body of mass 20 kg so that it acquires a velocity of 100 m/s?

10. A body weighs 63 N on the surface of the earth. What is the gravitational force on it due to the earth at a height equal to half the radius of the earth?

11. Read the given passage and fill in the blanks by selecting an appropriate option. __(i)__ is highest in solids while __(ii)__ is highest in gases. Gases and liquids both have high __(iii)__ .

	(i)	(ii)	(iii)
(a)	Fluidity	Density	Compressibility
(b)	Density	Fluidity	Rigidity
(c)	Rigidity	Fluidity	Density
(d)	Rigidity	Compressibility	Fluidity

12. Match column I with column II and select the correct option from the given codes.

Column I	Column II
P. Hot tea poured in saucer gets cooled faster.	(i) Evaporation increases with increase in temperature.
Q. We feel more cold after a hot water bath than a cold water bath.	(ii) Evaporation increases with decrease in humidity.
R. Water remains cool in earthen pitcher during dry hot day.	(iii) Evaporation increases with increase in wind speed.
S. We feel comfortable under a moving fan in summer.	(iv) Evaporation increases with increase in surface area.

(a) P – (ii), Q – (i), R – (iii), S – (iv)
(b) P – (iii), Q – (iv), R – (ii), S – (i)
(c) P – (iv), Q – (i), R – (ii), S – (iii)
(d) P – (iv), Q – (ii), R – (iii), S – (i)

13. Observe the given figure carefully.
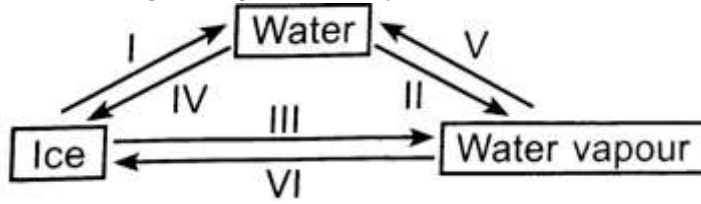
Which of the following statements is incorrect?
(a) Processes I, II and III are endothermic while processes IV, V and VI are exothermic.
(b) Water vapours formed during process II when come in contact with skin give out 22.5×10^5 J/kg more heat than the boiling water.
(c) Latent heat for process I is 3.34×10^5 J/kg.
(d) None of these

14. Rutherford's α – particle scattering experiment showed that
   i. Electrons have negative charge
   ii. The mass and positive charge of the atom is concentrated in the nucleus
   iii. Neutron exists in the nucleus
   iv. Most of the space in atom is empty

   Which of the above statements are correct?

   (a) i and iii
   (b) ii and iv
   (c) i and iv
   (d) iii and iv

15. The process used to separate oil and water is
   (a) Distillation
   (b) Sublimation
   (c) Separating funnel
   (d) Chromatography

16. Which is/are not correct amongst the following statement about cathode rays:
   (a) They are deflected by electric and magnetic fields
   (b) e/m ratio of the particles forming them depends upon the gas filled in the discharge tube
   (c) e/m ratio of constant, independent of the gas filled and cathode material
   (d) Particles forming them possess the same mass and same charge.

17. Which of the following is/are true for mixtures?
   (a) Mixtures can be homogenous or heterogeneous.
   (b) Components in a mixture are present in a fixed ratio.
   (c) Components are chemically combined in a mixture.
   (d) Components of a mixture can be separated easily by simple physical methods.

18. How many of the following substances have liquid dispersion medium whipped cream, clouds, blood, liquid air pollutants, smog, jellies, starch solution.

19. A gas was allowed to expand from a volume of 400 ml to 2000 ml at a constant temperature. The initial pressure of the gas was 3 atmospheres. If the final pressure of the gas in terms of x is x/10. Find the value of x.

20. A gas occupies 3.25 litres at 0°C. What volume will it occupy at – 20°C, pressure remaining constant?

21. Pteridophytes differ from bryophytes in possessing?
   (a) Spores
   (b) Vascular tissue
   (c) Archegonia
   (d) Alternation of generation

22. The solution filled in vacuole is called –
   (a) Nuclear sap
   (b) Cytoplasm
   (c) Cell sap

(d) Latex

23. Name the part of plant cell which traps solar energy.
    (a) Grana
    (b) Stroma
    (c) Cuticle
    (d) Chlorophyll

24. The tissue present in tendons are _____
    (a) Striated voluntary muscle.
    (b) Smooth and striated muscle
    (c) Cardiac and smooth muscle
    (d) Smooth and involuntary muscle.

25. Mature erythrocytes can not utilize glucose because they lack _____.
    (a) Enzymes
    (b) Golgi complex
    (c) Mitochondria
    (d) Nucleus.

26. In which of the following cases, conversion of leucoplasts to chloroplasts is observed?
    (a) Tubers of radish
    (b) Potato tubers
    (c) Ovary of tomato
    (d) Maize kernels.

27. Identify the functions of blood from the following –
    (a) Transportation of nutrients
    (b) Regulation of body temperature
    (c) Exchange of gases
    (d) Protection against infections

28. How many chambers are present in crocodiles?

29. How many cranial nerves are present in reptiles?

30. What is the size Svedberg units of the large subunit of the prokaryotic ribosome?

Section – B
Mathematics

31. $2^{3x} = 64^{-1}$ and $10y = 0.01$, then the value of $(50x)^{-1} (10y)^{-1}$ is:
    (a) 1
    (b) -1
    (c) 2
    (d) -2

32. Let $x = (2008)^{1004} + (2008)^{-1004}$ and $y = (2008)^{1004} - (2008)^{-1004}$ then the value of $(x^2 - y^2)$ is equal to:
    (a) 4
    (b) -4
    (c) 0
    (d) None

33. The value of $\left(1-\dfrac{1}{2^2}\right)\left(1-\dfrac{1}{3^2}\right)\left(1-\dfrac{1}{4^2}\right)....\left(1-\dfrac{1}{2019^2}\right)$ is

    (a) $\dfrac{2018}{2019}$

    (b) $\dfrac{1009}{2019}$

    (c) $\dfrac{1010}{2019}$

    (d) 1

34. The value of λ satisfying the relation $y = \lambda x + 5$, where x and y are the solution of pair equations $x + 2y = 10$ and $3x + 4y = 360$ is:

    (a) $\dfrac{1}{4}$

    (b) $\dfrac{-1}{4}$

    (c) $\dfrac{1}{2}$

    (d) $\dfrac{-1}{2}$

35. In the figure, each side of the largest triangle is 1 meter. By joining the midpoints of the sides of each triangle, an inner triangle is drawn.
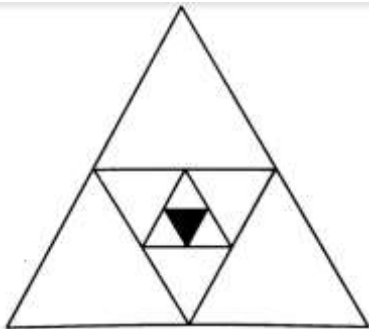

What is the area of smallest triangle (in sq. m.)?

    (a) $\dfrac{\sqrt{3}}{2}\left(\dfrac{1}{16}\right)^2$

(b) $\dfrac{\sqrt{3}}{4}\left(\dfrac{1}{8}\right)^2$

(c) $\dfrac{\sqrt{3}}{4}\left(\dfrac{1}{2}\right)^2$

(d) $\dfrac{\sqrt{3}}{4}\left(\dfrac{1}{4}\right)^2$

36. A quadrilateral has distinct integer side lengths. If the second – largest side has length 10, then the maximum possible length of the largest side is less than : -
   (a) 25
   (b) 26
   (c) 27
   (d) 28

37. Let $f(x) = ax^2 + bx + bx + c$, where a, b, c are integers, Suppose $f(1) = 0$, $40 < f(6) < 50$, $60 < f(7) < 70$ and $1000t < f(50) < 1000(t + 1)$ for some integer t. Then t cannot be
   (a) 2
   (b) 3
   (c) 4
   (d) 5 or more

38. Let x be a real number. If $a = 2011x + 9997$, $b = 2011x + 9998$ and $c = 2011x + 9999$, find the value of $a^2 + b^2 + c^2 - ab - bc - ca$.

39. Point K, L, M and N lie in the plane of the square ABCD so that AKB, BLC, CMD, and DNA are equilateral triangles. If ABCD has an area of 16, If the area of KLMN is $a + b\sqrt{3}$ then find b. (a, b are Natural number)
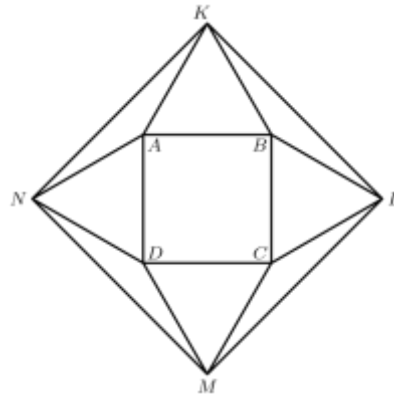
40. In the figure below, S is a point on OR and U is a point on PR. The line segments PS and QU intersect at the point T. It is given that PT = TS and QS = 2RS. If the area of ΔPQR is 150 cm^2 and the area of ΔPSU is x cm^2. Find the value of x.
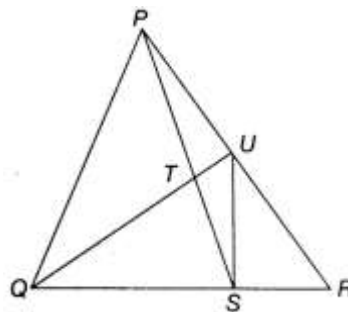
Section – C
Mental Ability

Part-I: Logical Puzzles

Directions (Q.No. 1 to 6): Study the following information carefully and answer the questions given below:

Seven persons T, U, V, W, X, Y and Z are sitting around a circular table. Two of them are not facing the center and the rest are facing the center. V is sitting third to the left of W and both are facing the center. X is not an immediate neighbor of W or V. The one who is exactly between W and Y is not facing the center. Z is sitting third to the right of T and is facing the center. One of the immediate neighbors of U is not facing the center.

41. Who among the following are not facing the center?
(a) U and X   (b) Y and V   (c) T and X   (d) Can't be determined

42. Who among the following is second to the left of X?
   (a) V   (b) W   (c) T   (d) Y

43. Who among the following is third to the left of V?
   (a) Y   (b) U   (c) T   (d) Can't be determined

44. What is the position of Y with respect to U?
   (a) Third to the right   (b) Second to the left   (c) Third to the left   (d) Fifth to the right

45. Which of the following statements is true?
      (a) Y sits on the immediate left of T.
      (b) The person who is exactly between Y and Z is facing the center.
      (c) The person who is exactly between U and Z is not facing the center
      (d) Both b and c

46. Who among the following are immediate neighbors of X?
      (a) UZ   (b) WY   (c) TZ   (d) VY

Directions (Q.No. 47 to 48): Study the following information carefully and answer the questions given below:
A is 10 m to the north of Z, who is to the northwest of Y, Z is 15 m to the west of B. C is 10 m to the east of Y, who is 10 m to the south of B.

47. In which direction is Y with respect to A?
      (a) South   (b) Southeast   (c) Southwest   (d) West

48. What is the distance between point A and Y?
      (a) 35 m   (b) 25 m   (c) 30 m   (d) 20 m

Directions (Q. No. 49 to 50): Study the following information carefully and answer the questions given below:
Ten members Q, R, S, T, U, V, W, X, Y and Z are made to sit in two rows – 1 and 2, five members in each row. They are facing each other in such a way that the members of row 1 are facing the members of row 2. The members of row 1 are facing south. T is third to the right of Q and is exactly opposite W. R sits on the immediate right of W and is facing south. X is third to the right of R and is exactly opposite V. S sits between Q and U and is opposite Y.

49. Who among the following sits second to left of S?
      (a) T   (b) V   (c) Q   (d) Z

50. Which of the following groups of persons sit in the same row?
      (a) U, X, Y   (b) Q, R, S   (c) W, Y, Z   (d) W, T, Y

Part-II: Mathematical Puzzle

51. Anjali puts into the basket one banana when ordered 'one', one kiwi when ordered 'Two', one litchi when ordered 'Three', and is asked to take out from the basket one banana and kiwi when ordered 'Four'.
A sequence of order is given as: 12342231124124213
How many total fruits will be in the basket at the end of the above order sequence?

52. On a dark night, 15 soldiers and 2 boys are on one side of a bridge which they need to cross. The soldiers weigh 80 kg each and the boys weigh 40 kg each. The bridge can bear a maximum load of 80 kg. It is mandatory for at least one person to carry a torch. Unfortunately, they have only 1 torch between them and the bridge is so long that they cannot throw the torch to the other side of it. Each of the 17 people takes exactly 1 minute to cross the bridge. What is the minimum possible time in which all 17 of them can cross the bridge? (Assume the weight of the torch to be negligible)

53. A customer bought a book worth Rs. 20 from a book store. She gave the book store owner a Rs. 50 note. As the book store owner did not have change he took the change from the owner of a nearby grocery store. He then returned the customer the balance Rs. 30. As it turned out, the Rs. 50 note that the customer had given to the book store owner was fake. Grocery store owner came next day and gave it back to the book store owner and took back his Rs. 50 The book store owner could obviously not return the note to the customer as he was not aware of her whereabouts. In this whole process, book store owner lost how much money?

54. There are two dice without any numbers written on any of the faces. Write numbers 0 to 9 on all faces of both dice (one number on each face) such that any day of a month (1 to 31) can be represented using the two dices. For Ex. 27th should be represented by 2 on one dice & 7 on other, 7th should be represented by 0 on one dice & 7 on other. Find the minimum sum of all the numbers appearing on the both dices (as there are total 12 faces on 2 dice)

55. A number can be constructed from any date of the year by adding the number of the month to the number of the day. For example: November 22nd would become the number 33, since November is the eleventh month, and 22 + 11 = 33. May 14 would become 19, and so on. How many different numbers can you make, using dates of the normal calendar?

56. In a building there are 999 doors and 999 residents. Each door is assigned a number from 1 to 999. Initially all doors are open. On day 1, resident no. 1 reverses the positions of all the doors. On day 2, resident no. 2 reverses the positions of door numbers 2, 4, 6….. On day 3 resident no. 3 reverses the positions of door numbers 3, 6, 9…. And so on. This happens till day no. 999. How many doors are closed at the end of day 999?

57. Sam bought a box which contained some bananas for his 5 friends. None of his friends knew how many bananas are there. Sam asked them to guess the number of bananas in the box. Their guesses were 33, 37, 41, 51 and 39 but none of the guesses were correct. Sam then told them that their guesses deviated from the actual number of bananas by 5, 9, 1, 9 and 3 in no particular order. Can you tell the number of bananas in the box?

58. Anvita and Tripti have the following conversation –

    Tripti: My age is not more than 37.

    Anvita: I am 35.

    Anvita: You are at least 5 years elder to me.

    Tripti: you are at least 36.

    As usual, both women are lying about their ages in all the four statements. What is sum of their actual ages?

59. Two friends decided to spend their vacation in Manali, during their vacation however, it rained on 17 days. But when it rained in the morning, the afternoon was fine, and every rainy afternoon was preceded by a fine morning. There were 13 fine mornings and 14 fine afternoons. How long was the vacation? It is given that during the vacation, the number of afternoons and morning were equal.

60. Two trains are running at the speed of 50 km/hr on the same track towards each other. When they were 50 km apart a fly sitting on one of the trains starts flying to and fro between the two trains until the trains collide and the fly gets killed. Fly moves to and fro with the constant speed of 140 km/hr. Assuming that fly does not take any time in changing its direction after reaching one train, Then how many km's has the fly travelled before it got killed?

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SPACE FOR ROUGH WORK

Answer Key

1	b	21	c	41	b
2	a	22	c	42	a
2	c	23	a	43	a
4	a	24	a	44	c
5	d	25	c	45	d
6	a, c	26	a, b	46	a
7	a, d	27	a ,b ,c, d	47	a
8	4	28	04	48	c
9	20	29	12	49	b
10	28	30	50	50	a
11	d	31	b	51	8
12	c	32	a	52	61
13	d	33	c	53	50
14	b	34	d	54	39
15	c	35	b	55	42
16	a, b, d	36	c, d	56	31
17	a, d	37	a, b, d	57	42
18	3	38	3	58	72
19	5	39	60	59	22
20	5	40	20	60	70