



**P-TQE 2024**

**Pinnacle** Talent Quest Exam

For 6<sup>th</sup> to 11<sup>th</sup> Class Students

**STAGE - 1 & STAGE - 2**

**Pinnacle Talent Quest Exam**

**SAMPLE TEST  
PAPER**

**Class 7<sup>th</sup>**



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## P-TQE 2024

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# WE ARE THE CHAMPIONS OF JEE MAIN 2023

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## EXTRAORDINARY RESULTS IN NEET



## TOP PERFORMANCES IN JEE MAINS & ADVANCE



### KVPY RESULT

### ADVANCE OLYMPIADS RESULT

### NTSE RESULT

### NMTC-2022

### IOQM-2023



### IMO-2022 RESULT



### IOS - 2022 RESULT

### NSO RESULT





# 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 appear 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 can check their test reports and performance analysis via a unique online login ID. Their results are also communicated to parents via SMS.

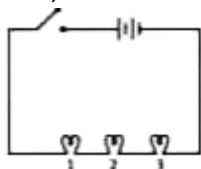


### Addressing the Board Exam 4

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.

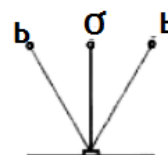
## Section – A Science

1. Phenomenon of advance sunrise and delayed sunset is caused by:
  - (a) Reflection of light
  - (b) Refraction of light
  - (c) Dispersion of light
  - (d) All the above
2. Marking on a bulb is 15 W, 120 V. What does it signify?
  - (a) The bulb is connected across the 120 volts, 15 joules of energy is consumed for every second
  - (b) The bulb is connected across 15 volts, 120 joules of energy is released.
  - (c) 40 units of current will flow in the bulb
  - (d) 220 unit of current will flow in the bulb
3. A child pushes a car but it does not displace from its place then, the work done by child will be known as:
  - (a) positive work
  - (b) negative work
  - (c) zero work
  - (d) none of these
4. Which of the following statements will be true for the given circuit, when the switch will be on?



- (a) Lamp 3 will glow first
  - (b) Lamp 1 will glow first
  - (c) Lamp 1 and 2 will glow together and lamp 3 will glow later
  - (d) All the lamps will glow together
5. When two bodies at different temperatures are placed in thermal contact with each other, heat flows from the body at higher temperature to the body at lower temperature until they both acquired the same temperature. Assuming that there is no loss of heat to the surroundings, the heat:
  - (a) The heat gained by the hotter body will be equal to the heat lost by the colder body
  - (b) the heat gained by the hotter body will be less than the heat lost by the colder body
  - (c) the heat gained by the hotter body will be greater than the heat lost by the colder body

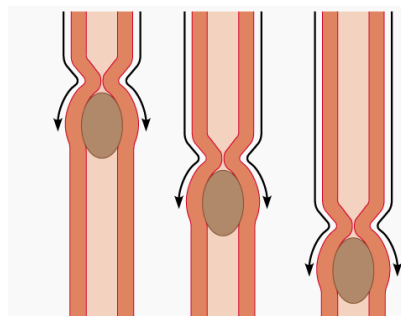
- (d) the heat lost by the hotter body will be equal to the heat gained by the colder body.
6. We receive heat energy from the sun through \_\_\_\_\_ mode of transmission
  - (a) Conduction
  - (b) Convection
  - (c) Radiation
  - (d) Yet to be found
7. Richa takes 20 minutes from her house to reach her school. If her speed is 4 m/s, calculate the distance between her house and the school.
  - (a) 4800 m
  - (b) 2400 m
  - (c) 1600 m
  - (d) 1500 m
8. The time period in the given simple pendulum is:



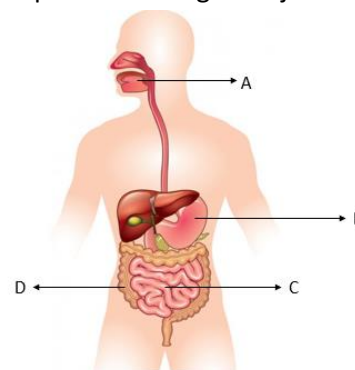
- (a) Time taken by bob to travel Q to R
  - (b) Time taken by bob to travel Q to P then from P to Q.
  - (c) Time taken by bob to travel Q to R then from R to P
  - (d) Time taken by bob to travel Q to R then from R to P and then from P to Q
9. Which of the following is an advantage of distance-time graph?
  - (a) Variation of distance travelled by an object with time can be seen easily
  - (b) We can find distance moved by the object at any point of time
  - (c) We can find speed of an object
  - (d) All of these
10. Short wire has \_\_\_\_\_ whereas long wire has \_\_\_\_\_ resistance.
  - (a) More , less
  - (b) Less, no
  - (c) Less, more
  - (d) All the above
11. When phenolphthalein is introduced in lime water, the solution turns:
  - (a) Yellow
  - (b) Green

- (c) Colourless  
(d) Pink
12. The chemical used in the manufacture of antacid is –  
(a) phosphoric acid  
(b) magnesium hydroxide  
(c) caustic soda  
(d) Both b and c
13. Conversion of ozone into oxygen is  
(a) physical change  
(b) chemical change  
(c) periodic change  
(d) temporary change
14. When sodium oxide reacts with water it undergoes a chemical change. The name of the product is –  
(a) Hydrogen  
(b) Sodium chloride  
(c) Sodium hydroxide  
(d) Sodium nitride
15. A fibre which is lustrous in appearance is –  
(a) Jute  
(b) Cotton  
(c) Rayon  
(d) wool
16. The “World Water Day” is celebrated on –  
(a) 12 January  
(b) 22 March  
(c) 16 June  
(d) 14 July
17. The fibres of silk are made up of –  
(a) Fat  
(b) Protein  
(c) Carbohydrate  
(d) vitamin
18. The substance having highest specific heat is –  
(a) Kerosene  
(b) Petrol  
(c) Alcohol  
(d) water
19. The rate of evaporation increases with the  
(a) increase in temperature.  
(b) decrease in surface area.  
(c) increase in humidity.  
(d) decrease in wind speed.
20. Renu had a basic solution. She added an indicator and the solution turned green. The indicator is –  
(a) Phenolphthalein  
(b) Methyl orange  
(c) Litmus red  
(d) China rose
21. Which of the following sets is the correct combination of organs that carry out digestive functions?  
(a) Oesophagus, Large intestine, Rectum  
(b) Buccal cavity, Oesophagus, Rectum

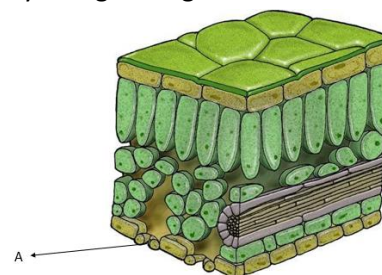
- (c) Buccal cavity, Small intestine, Large intestine  
(d) Stomach, Buccal cavity, Small intestine
22. The movement shown in figure is aided by the muscles of the oesophagus in a wave-like action called



- (a) Diapedesis  
(b) Peristalsis  
(c) Rumination  
(d) Muscularization
23. Which part secretes gastric juice?



- (a) A  
(b) B  
(c) C  
(d) D
24. Identify A in given figure



- (a) Leaf cell  
(b) Flower anatomy  
(c) Stomata  
(d) Can't determine
25. How many statements are correct?  
Statement 1: Fungi grow on pickles, leather, clothes and other articles that are left in hot and humid weather for long time



Statement 2: Egestion is the process of utilizing the absorbed nutrients to produce energy for various body function

Statement 3: The jug-like structure in pitcher plant is the modified part of stem

Statement 4: Algae can prepare their own food by photosynthesis

- (a) One
- (b) Two
- (c) Three
- (d) Four

26. Consider the following statements and select the option which correctly identifies true (T) and false (F) ones.

Statement 1: Insects have a network of air tubes called tracheae for gas exchange

Statement 2: During heavy exercise, we get cramps in the legs due to accumulation of carbon dioxide

Statement 3: Earthworms breathe only through lungs

Statement 4: During inhalation, ribs move down and inwards and diaphragm moves up

- (a) (1) → F, (2) → T, (3) → F, (4) → T
- (b) (1) → T, (2) → T, (3) → F, (4) → T
- (c) (1) → T, (2) → F, (3) → F, (4) → F
- (d) (1) → T, (2) → T, (3) → T, (4) → F

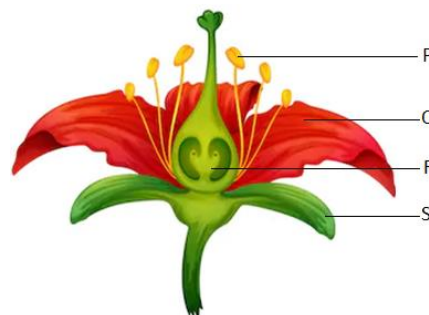
27. Read the given passage.

Pulmonary carries rich blood from the heart to the lungs and pulmonary\_\_\_ carries\_\_\_rich blood from the lungs to the heart.

Select the option that correctly fills up the blank spaces in the above passage.

- (a) Vein, Carbon dioxide, Artery, Oxygen
- (b) Vein, Oxygen, Artery, Carbon dioxide
- (c) Artery, carbon dioxide, Vein, Oxygen
- (d) Artery, Oxygen, Vein, Carbon dioxide

28. Which part will protect the flower in bud condition?



- (a) P
- (b) Q
- (c) R
- (d) S

29. How many statements are incorrect?

Statement 1: The process of removal of metabolic wastes produced in the cells of the living organisms is called excretion

Statement 2: The urine consists of 70 % water, 25 % urea and 2.5% other waste products.

Statement 3: From ureter, urine will directly go outside the body

- (a) One
- (b) Two
- (c) Three
- (d) All are correct

30. Consider the following statements

Statement 1 – The heart beat is initiated by special patch of muscle called SA node

Statement 2 – The walls of the chambers of the heart contract and relax rhythmically

- (a) Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.
- (b) Both statements 1 and 2 are true but both are different statements
- (c) Statement 1 is true but statement 2 is false
- (d) Both statements 1 and 2 are false

## Section – B Mathematics

31. The median of the following data is equal to:

- 2, 3, 4, –5, 9, 8, 11  
 (a) 5  
 (b) 4  
 (c) 9  
 (d) None of these

32. If mode and median of a given data are 6 and 3 respectively, then their mean is

- (a) 1.5  
 (b) 1.6  
 (c) 1.4  
 (d) None of these

33. The denominator of a fraction is 2 more than its numerator. If 2 is added to both numerator and denominator, then we get  $\frac{3}{5}$ . The required fraction is

- (a)  $\frac{1}{3}$   
 (b)  $\frac{3}{5}$   
 (c)  $\frac{7}{9}$   
 (d)  $\frac{9}{11}$

34. The complement and supplement of an angle are such that the complement is  $\frac{5}{14}$  times its supplement. The angle is

- (a)  $40^\circ$   
 (b)  $60^\circ$   
 (c)  $70^\circ$   
 (d) None of these

35. The angle formed by the bisectors of a linear pair of angles is

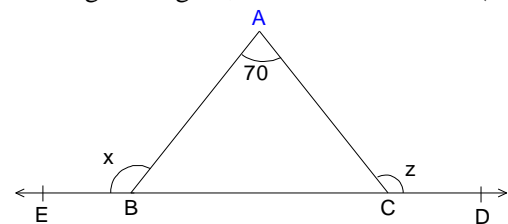
- (a) Right – angle  
 (b) Acute angle  
 (c) Obtuse angle

(d) Reflex angle

36. The altitudes of a triangle are concurrent. The point of concurrence is known as

- (a) Orthocenter  
 (b) Circumcenter  
 (c) Centroid  
 (d) Incentre

37. In the given figure, find the measure of  $(x + z)$



- (a)  $225^\circ$   
 (b)  $250^\circ$   
 (c)  $300^\circ$   
 (d) None of these

38. A rectangle of length 40 cm and of diagonal 41 cm is constructed. Find the area of the square described on its breadth

- (a) 100  
 (b) 41  
 (c) 81  
 (d) 121

39. Two numbers are in the ratio 5:3. If they Differ by 18, then the number are

- (a) 45, 27  
 (b) 25, 15  
 (c) 35, 21  
 (d) 65, 39

40. Which of the following is not correct

- (a) two lines segments of length 4 cm are always congruent  
 (b) a person and his image in plane mirror are congruent  
 (c) two equilateral triangle are always congruent  
 (d) two circles of the same radii are always congruent



**Section – C**  
**Mental Aptitude****Part-I (Logical Puzzles)**

**Directions (Q.No. 1 to 4):** Study the following information carefully and answer the questions given below:

In a certain code '6 2 5' is written as 'art is beauty', '4 6 8' is written as 'thou art good', '4 3 1 7' is written as 'colour good and bad' and '2 0 9 3' is written as 'it is colour effect'

41. What is the code for 'effect'?
- (a) 0                                      (b) 4                                      (c) 9                                      (d) Either 0 or 9
42. If '1' is the code for 'bad', then what is the code for 'and'?
- (a) 4                                      (b) 7                                      (c) 3                                      (d) 6
43. What is the code for 'thou colour beauty'?
- (a) 9 8 5                                      (b) 2 5 4                                      (c) 8 3 5                                      (d) Can't be determined
44. What is the code for 'art'?
- (a) 6                                      (b) 2                                      (c) 5                                      (d) 8

**Directions (Q.No. 5 to 6):** Study the following information carefully and answer the questions given below:

Person **A** walked 25m towards south and then took a left turn and walked 45m. Again he took a left turn and walked 25 m. Finally he turned to his right and walked 20 m and stopped.

45. How far is he from the starting point?
- (a) 45 m                                      (b) 50 m                                      (c) 65 m                                      (d) 20 m
46. In which direction is **A** from his starting point?
- (a) East                                      (b) West                                      (c) South                                      (d) North

**Directions (Q.No. 7 to 11):** Study the following information carefully and answer the questions given below:

Mr. Goyals fitness schedule consists of Running, Swimming, Gymnastics, Jogging and Skipping from Monday to Saturday. Each workout is on one day each and one day is a rest day.

- ⌚ Skipping is done before Gymnastics but after rest day.
- ⌚ Skipping and Jogging are done with two days' gap between them.
- ⌚ Gymnastics is done neither on the first day nor on the last day but is done earlier than Swimming.
- ⌚ Running is done on the previous day of the rest day.
- ⌚ Jogging is done on the next day of the Swimming day

47. On which of the following days is Skipping done?

- (a) Tuesday                      (b) Thursday                      (c) Friday                      (d) Wednesday

48. There is a gap of how many day(s) between Running and Swimming?

- (a) One                      (b) Two                      (c) Three                      (d) Four

49. Which of the following day is Rest day?

- (a) Monday                      (b) Tuesday                      (c) Friday                      (d) Thursday

50. Jogging is done on which of the following days?

- (a) Saturday                      (b) Wednesday                      (c) Monday                      (d) Can't be determined

### Part-II (Mathematical Puzzles)

51. A few monkeys are moving. The 1<sup>st</sup> monkey says, "There are 8 monkeys behind me". The last monkey says, "There are 8 monkeys in front of me". The monkey in the middle says, "There are 8 monkeys in front of me and 8 monkeys behind me". How many monkeys are moving?
52. Mr. & Mrs. Khan live happily with their 4 sons and each son has 3 sisters. There is no one else in the family. Every child of Khan family shakes hand with each of his/her brothers and sisters. How many total handshakes have been performed?
53. You have six 8's and you may use any of the (+, ., -, / , ×) as many times as you like. How many arithmetical expressions which use the six 8's to form 1000 are possible?
54. On a dark night, 11 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 long so that they cannot throw the torch to the other side of it. All the 13 people take exactly 1 minute to cross the bridge. What is the minimum possible time in which all 13 of them can cross the bridge? (Assume the weight of the torch to be negligible)?
55. In an India –Pakistan T20 Match, Sachin Tendulkar faces the 1<sup>st</sup> ball. Let the maximum number of runs that he can score in the match are Y. Then what is the value of Y/39. (Assume there are no wides, no no-balls, no overthrows and the batsman can take a maximum of only 3 runs while running).



56. Read the following information and answer the questions that follow.

There are 70 clerks working with M/s. Jha Lal Khanna & Co. chartered accountant, of which 30 are female.

- I. 30 clerks are married.
- II. 24 clerks are above 25 years of age
- III. 18 Married clerks are above 25 years of age; among them 7 are males.
- IV. 12 males are above 25 years of age

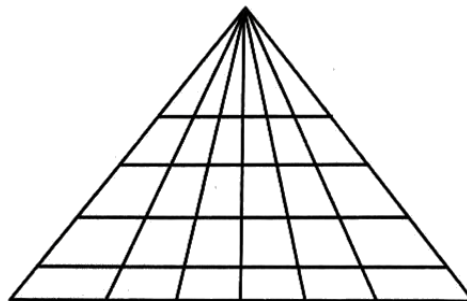
How many unmarried girls are there above 25?

57. A shopkeeper wants to measure all the integral weights from 1 kg to 100 kg using a common balance only once. He can keep the weights on only one side of the balance. For ex. If a customer comes and asks for 35kg sugar, he should be able to put some combination of weights on one side of the balance such that total of these weights becomes 35. Similarly he should be able to measure 1kg, 2kg, 3kg,..... 99kg and 100 kg. What is the minimum number of weights needed?

58. 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?

59. You have 8 black socks, 14 white socks and 18 grey socks in your drawer. The room is completely dark and you have no source of artificial light. What is the minimum number of socks that you'll have to pick up to ensure that you have a correct pair (a pair of same coloured socks)?

60. Let the no of triangles in the figure given below is X. Then find the value of X-20.





SPACE FOR ROUGH WOR



### Answer Key

1	<b>b</b>	21	<b>d</b>	41	<b>b</b>
2	<b>a</b>	22	<b>b</b>	42	<b>d</b>
2	<b>a</b>	23	<b>b</b>	43	<b>c</b>
4	<b>d</b>	24	<b>c</b>	44	<b>a</b>
5	<b>d</b>	25	<b>b</b>	45	<b>c</b>
6	<b>c</b>	26	<b>c</b>	46	<b>b</b>
7	<b>a</b>	27	<b>c</b>	47	<b>a</b>
8	<b>d</b>	28	<b>d</b>	48	<b>d</b>
9	<b>d</b>	29	<b>a</b>	49	<b>d</b>
10	<b>c</b>	30	<b>b</b>	50	<b>c</b>
11	<b>d</b>	31	<b>b</b>	51	<b>97</b>
12	<b>b</b>	32	<b>a</b>	52	<b>4</b>
13	<b>b</b>	33	<b>a</b>	53	<b>3</b>
14	<b>c</b>	34	<b>a</b>	54	<b>33</b>
15	<b>c</b>	35	<b>a</b>	55	<b>65</b>
16	<b>b</b>	36	<b>a</b>	56	<b>15</b>
17	<b>b</b>	37	<b>b</b>	57	<b>64</b>
18	<b>d</b>	38	<b>c</b>	58	<b>1</b>
19	<b>a</b>	39	<b>a</b>	59	<b>87</b>
20	<b>d</b>	40	<b>c</b>	60	<b>64</b>