Pinnacle Talent Quest Exam

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P-TQE 2022

Sample Paper- 8th

SET-A

A. General Instructions
1. Attempt ALL the questions. Answers have to be marked on the OMR sheets.
2. Time allowed to attempt this paper is **1 hour.**
3. This question paper contains **3 Sections.**
4. **Section- A** MAT (Mental Ability Test)
   Section- B (Mathematics)
   Section- C (Science)
5. Rough spaces are provided for rough work inside the question paper. No additional sheets will be provided for rough work.
6. Blank Papers, clip boards, log tables, slide rule, calculator, cellular phones, pagers and electronic devices, in any form, are not allowed.

B. Filling of OMR Sheet
1. Ensure matching of OMR sheet with the Question paper before you start marking your answers on OMR sheet.
2. On the OMR sheet, darken the appropriate bubble with black pen for each character of your Enrolment No. and write your Name, Test Centre and other details at the designated places.

C. Marking Scheme for All Three Sections.
(i) Section-A (01 to 10) contains 10 multiple choice questions of **MAT** which have only one correct answer. Each question carries **+4 marks** for correct answer and **-1 mark** for wrong answer.
(ii) Section-B (11 to 30) contains 20 multiple choice questions of **Mathematics** which have only one correct answer. Each question carries **+4 marks** for correct answer and **-1 mark** for wrong answer.
(iii) Section-C (31 to 60) contains 30 multiple choice questions of **Science** which have only one correct answer. Each question carries **+4 marks** for correct answer and **-1 mark** for wrong answer.
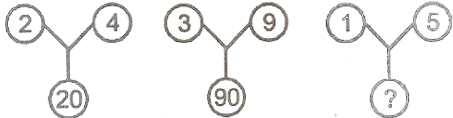
Roll No:

Name:

Batch:

Section – A

PART- I
MENTAL ABILITY TEST (MAT)

1. 1, 4, 27, 16, 125, 36, ?

(A) 216   (B) 343   (C) 64   (D) 49

2. UTRQU, QPNMT, MLJIS, IHFER, ?

(A) EDCAQ   (B) EDBAQ   (C) IHFGP   (D) KJHGP

3.

(A) 75   (B) 26   (C) 25   (D) 20

4.

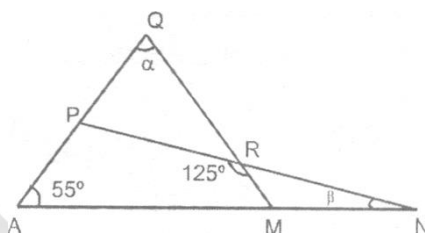| 11	12	13
18	15	16
25	?	21

(A) 19   (B) 18   (C) 20   (D) 21

5. If the positions of the first and sixth letters of the word BENEFICIAL are interchanged; similarly the positions of the second and seventh letters are interchanged and so on, which letter will be third from the right end after rearrangement?

(A) C   (B) E   (C) F   (D) N

6. In a certain code language, 3a, wb, 7c means truth is eternal, 7c, 9a, 8b, 3a' means enmity is not eternal, 9a, 4d, 2b, 8b' means truth does not perish. Which of the following does mean eternal in that language?

(A) 3a   (B) 2b   (C) 7c   (D)Cannot be determined

7. In a certain language MONKEY is coded as 632471 and GANGA is coded as 58258, Then how is MONGYA coded?

(A) 638152   (B) 543127   (C) 632518   (D) 671854

8. Ramesh starts walking from his house at 4 PM facing towards sun and walks 5 km. Then he turns left and walks 8 km. Again turning to left he walks 13 km and reaches Mohan's house. In which direction Ramesh's house is from Mohan's house?

(A) North-West   (B) North-East   (C) South-West   (D) South-East

9. Five persons were playing cards game sitting in a circle all facing the centre. Mukund was to the immediate left of Rajesh, Vijay was to the right of Anil and between Anil and Nagesh. Who was to the immediate right of Nagesh?

(A) Vijay   (B) Rajesh   (C) Anil   (D) Mukund

_____Space for Rough Work_____

10. In a Class Vidya ranks 7th from the top, Divya is 7 ranks ahead of Medha and 3 ranks behind Vidya. Sushma who is 4th from the bottom, is 32 ranks behind Medha. How many students are there in the class?
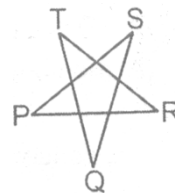(A) 52   (B) 49   (C) 50   (D) None of these
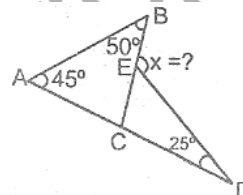
Section-B
Mathematics

11. Find x if $\left(\sqrt{3}\right)^{x+5} = \left(\sqrt[3]{3}\right)^{2x+5}$

(A) 0   (B) 5   (C) 1   (D) 4

12. Which one of the following statement is correct:
(A) There is no perfect cube which ends in 4
(B) for an integer a, a^3 is always greater than a^2
(C) If a divides b, then a^3 divides b^3
(D) If a^2 ends in even number of zeros, then a^3 Ends in odd number of zero.

13. In the Fig. AMN, APQ, QRM and PRN are all straight lines.
The value of $\alpha + \beta$ is.

(A) 70^0
(B) 55^0
(C) 90^0
(D) 75^0

14. If the LCM of first 100 natural numbers is P then the LCM of first 105 natural numbers would be :
(A) P   (B) P + 105   (C) P(P + 101)(P + 103) (D) 103 × 101 × P

15. The salaries of A, B and C together amounts or Rs. 333. If they spends 80%, 85% and 75% of their respective salaries. If their savings are 7 : 6 : 9, then their respective salaries are
(A) Rs. 102, Rs. 118 and Rs. 113   (B) Rs. 105, Rs. 120 and Rs. 108
(C) Rs. 85, Rs. 125 and Rs. 123   (D) None of these

16. The cost price of 21 articles is equal to selling Price of 18 articles, then the gain or loss percent

(A) $16\frac{2}{3}\%$ loss   (B) $16\frac{2}{3}\%$ gain

(C) $16\frac{1}{3}\%$ loss   (D) $16\frac{1}{3}\%$ gain

17. The least number that must be subtracted from 893304 so as to get a perfect square:
(A) 273   (B) 279   (C) 275   (D) 277

18. A can do a piece of work in 9 days and B in 18 days, they began the work together but 3 days before the completion of work, A leaves The total time taken to complete the work is:
(A) 7 days   (B) 5 days   (C) 8 days   (D) 11 days

19. What is the HCF of $\frac{1}{5}, \frac{2}{7} \ and \ \frac{3}{11}$?

(A) $\frac{1}{385}$ (B) 6   (C) $\frac{1}{35}$ (D) $\frac{5}{77}$

20. Mean of eight numbers is 38.4 and the mean of seven of them is 39.2 What is the eight number?
(A) 34.8   (B) 32.8   (C) 0.8   (D) None of these

_____**Space for Rough Work**_____

21. 71. A number 1568X35y is divisible by 88. What are the value of X and Y?
(A) 4, 2   (B) 2,4   (C) 6, 2   (D) 2, 6

22. An inlet pipe alone can fill the whole tank in 5 hr while an outlet pipe can empty the tank in 15 hr When both the pipes are open, in what Time will the tank be fillied ?
(A) $15\dfrac{1}{2}hrs$ (B) $7\dfrac{1}{2}hrs$ (C) $7\dfrac{1}{4}hrs$ (D) $2\dfrac{1}{7}hrs$

23. If 2x + 3y : 3x + 5y = 18 : 19 find x : y.
(A) – 33 : 16   (B) 33 : 16   (C) 16 : 33   (D) – 16 : 33

24. A train crosses a pole in15 s and crosses a
Platform of 100 m ling in 30s. Find the length of the train?
(A) 75 cm   (B) 130 cm   (C) 100 m   (D) can't be determined

25. Ram's father is thrice as old as Ram was 2 years ago. Five years from now, Ram's father will be 6 years. More than 2 times of Ram's age. What is Ram's present age?
(A) 45 years   (B) 27 years   (C) 54   (D) 17 years

26. Which of the following is the smallest:
$$\dfrac{14}{25}, \dfrac{57}{100}, \dfrac{49}{86}, \dfrac{3}{5}$$
(A) $\dfrac{14}{25}$ (B) $\dfrac{57}{100}$ (C) $\dfrac{49}{86}$ (D) $\dfrac{3}{5}$

27. There is a room of dimensions 15m x 10m x 20m. Find the cost of white wash of four walls at the rate of Rs. 2.5 per m^2
(A) Rs. 1800   (B) Rs 2500   (C) Rs. 2400   (D) None

28. In the figure given sum of all the angles is equal to
(A) 10 right angles   (B) 12 right angles
(C) 14 right angles   (D) 16 right angles

29. A spherical copper ball of diameter 14 cm is melted and converted into a wire having diameter 14 cm. Find the length of the wire.
(A) $\dfrac{28}{3}cm$ (B) $\dfrac{7}{3}cm$ (C) $\dfrac{14}{3}cm$ (D) $\dfrac{28}{2}cm$

30. Find the value of x in the given figure.
(A) 110 $^\circ$
(B) 120 $^\circ$
(C) 100 $^\circ$
(D) 70 $^\circ$

_____**Space for Rough Work**_____

Section-C

Science

31. Herbivorous animals can digest cellulose because.
(A) their molar and premolar teeth can crush and grind the food
(B) bacteria present in their caecum helps in digestion of cellulose
(C) gastric juice has a digestive enzyme from cellulose digestion
(D) alimentary canal is very long

32. Which of the following reactions involves the Combination of two elements?
(A) $CaO + CO_2 \rightarrow CaCO_3$
(B) $4Na + O_2 \rightarrow 2Na_2O$
(C) $SO_2 + 1/2O_2 \rightarrow NH_4Cl$
(D) $NH_3 + HCl \rightarrow NH_4Cl$

33. Which of the following helps in intracellular digestions?
(A) Plasma membrane   (B) Golgi bodies
(C) Endoplasmic reticulum   (D) Lysosomes

34. Bile is secreted by -
(A) bile duct   (B) pancreas
(C) gall bladder   (D) liver

35. Which of the following yields minimum number of ATP?
(A) Anaerobic respiration
(B) Aerobic respiration
(C) Both are equal
(D) None of these

36. Which one of the following characters does not belong to a hydrophyte ?
(A) Abundant air spaces and air chambers
(B) Plentiful xylem and sclerenchyma
(C) Leaves having stomata on the uppe side or stomata are absent.
(D) Poor development of roots

37. The green house effect is related to.
(A) Planting green trees on house
(B) global warming
(C) grassland
(D) greenery in country

38. Which of the following pair is/are correct :
(i) Malachite - Copper
(ii) Cinnabar - Mercury
(iii) Fluorspar – Silver
(iv) Galena - Lead
(A) (i), (ii), & (iii)   (B) (ii), (iii) & (iv)
(C) (i), (iii) & (iv)   (D) (i), (ii), & (iv)

39. Choose the correct statement:
(A) Heat can be transferred by conduction in vacuum also
(B) Heat can be transferred by convection in vacuum also
(C) Heat can be transferred by radiation in vacuum also
(D) None of these

_____**Space for Rough Work**_____

40. During summer, an echo is heard :
(A) Later than during winter
(B) Rarely
(C) Sooner than during winter
(D) After same time as in winter

41. Some fuels and their main constituents are given in Column I and Column II.
Column –I   **Column-II**
(1) L.P.G.   (a) Methane
(2) Biogas   (b) Butane
(3) Coal   (c) Carbon
Choose the correct match:
(A) (1) → (a), (2) → (b), (3) → (c)
(B) (1) → (b), (2) → (a), (3) → (c)
(C) (1) → (c), (2) → (a), (3) → (b)
(D) (1) → (a), (2) → (c), (3) → (b)

42. A sound wave travels from east to west. In which direction do the particles of air move ?
(A) Up and down   (B) Along north-south
(C) Along east-west   (D) None of these

43. Parthenogenesis is development of new individual form
(A) a single gamete without fertilization
(B) fertilization of female gamete with female gamete.
(C) fertilization of male gamete with male gamete.
(D) vegetative structure

44. Cinematography makes use of :
(A) Persistence of vision
(B) Accommodation
(C) Bi-focal lens system
(D) Least distance of distinct vision

45. Who among the following successfully launched the satellite SROSS-3 on 19th may, 1992 ?
(A) USSR   (B) USA
(C) India   (D) Europe

46. Destructive distillation of coal does not give :
(A) Coal   (B) Charcoal
(C) Ammoniacal liquor   (D) Coke

47. Match the items gives in Column I and Column II
Column –I   **Column-II**
(1) Ceres   (a) Star
(2) Milky way   (b) Galaxy
(3) Orion   (c) Constellation
(4) Sun   (d) Asteroid
Choose the correct match :
(A) (1) → (d), (2) → (b), (3) → (c), (4) → (a)
(B) (1) → (a), (2) → (b), (3) → (c) , (4) → (d)
(C) (1) → (b), (2) → (a), (3) → (d) , (4) → (c)
(D) (1) → (c), (2) → (d), (3) → (a) , (4) → (b)

48. If the temperature scale is changed from ^{o}C to ^{o}F the numerical value of specific heat will :
(A) decrease   (B) remain unchanged
(C) increase   (D) nothing can be said

_____**Space for Rough Work**_____

49. Velocity of sound in fresh water is :
(A) more than that in sea water
(B) less than that in air
(C) less than that in sea water
(D) more than that in alcohol

50. A body will sink in a liquid when –
(A) The weight of the body is equal to the pthrust.
(B) The weight of the body is less than the upthrust.
(C) The weight of the body is greater than the upthrust.
(D) none of these

51. Air can be liquefied under following conditions-
(A) high pressure and high temperature.
(B) low pressure and low temperature.
(C) high pressure and low temperature.
(D) low pressure and high temperature.

52. The valency of an element is -
(A) the mass of the element displacing 1 part by the mass of hydrogen.
(B) the mass of the element combining with 8 parts by the mass of oxygen.
(C) the number of atoms of hydrogen displaces by one atom of the given element.
(D) the number of atoms in 1 molecule of the given element.

53. A volatile solid soluble in benzene would probably-
(A) have electrovalent bonding
(B) have covalent bonding
(C) be a good conductor of electricity
(D) be a salt

54. In the equation
$NaOH + HNO_3 \rightarrow NaNo_3 + H_2O$
Nitric acid is acting as –
(A) an oxidizing agent
(B) an acid
(C) a nitrating agent
(D) a dehydrating agent

55. The temperature of the substance remain constant when it is melting or boiling though some quantity of heat is supplied. What happens to this energy?
(A) It is dissipated as sound energy
(B) It is consumed to decrease the energy of the molecule.
(C) It is used to change the state of the substance.
(D) It is still an unsolved problem in science.

56. When light is incident on a boundary separating two media,
(A) It bends away from the normal in all cases
(B) It always bends towards the normal
(C) It does not bend when it is incident normal to the boundary.
(D) It bends away from the normal when the light passes from rarer to denser medium

_____**Space for Rough Work**_____

57. Charge flows between two ends of a conductor when :
(A) Same electric potential is present at the two end.
(B) Equal and same type of charges are present at the two ends
(C) Different electric potential exist at the two ends of a conductor
(D) The potential difference between the ends is zero

58. Which of the following shows that the earth behaves as a magnet?
(A) Repulsion between like poles.
(B) Attraction between unlike poles.
(C) existence of null points in the magnetic field of a bar magnet.
(D) Non-existence of monopoles.

59. Which one provides correct sequence of events in origin of new species according to Darwinism?
1. Natural selection
2. Variation and inheritance
3. Survival of the fittest
4. Struggle for existence
(A) 1,2,3,4   (B) 2,3,1,4
(C) 3,4,1,2   (D) 4,2,3,1

60. $C_6 H_{12} O_6 \xrightarrow{\text{absence of O}}$ lactic acid
This reaction occurs at
(A) lung alveoli   (B) muscle cells
(C) yeast cell   (D) none of these

_____**Space for Rough Work**_____

Answer Key

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