



SAMPLE TEST PAPER A TALENT SEARCH EXAM 2021



Time : 30 Minutes

Class : 10th_ STAGE - 1

Max. Marks : 100

INSTRUCTIONS

DO NOT BREAK THE SEAL WITHOUT BEING INSTRUCTED TO DO SO BY THE INVIGILATOR

[A] General :

1. Attempt ALL the questions. Answer have to be **darkened** on the **OMR** sheet.
2. This question paper contains **25 questions**.
3. The question paper consists of **THREE Parts, e.g. Mathematics (1 to 10), Science (11 to 20) & Mental Ability (21 to 25)**
4. Blank spaces are provided at the bottom of each page for rough work. No additional sheets will be provided for rough work.
5. Blank paper, clipboard, log tapes, slide rules, calculators, cellular phones, pagers and electronic gadgets in any form are **NOT** allowed.
6. Do not Tamper / mutilate the **OMR sheet** or this booklet.
7. Do not break the seals of the question-paper booklet before instructed to do so by the invigilator.
8. **SUBMIT** the OMR sheet to the invigilator after completing the test & take away the test paper with you.

[B] Filling of OMR Sheet :

9. In all the parts, each question will have 4 choices out of which **only one choice is correct**
10. Use only Black/Blue ball point pen for filling the OMR sheet.
11. On the OMR sheet, darken the appropriate bubble for each character of your name, Registration No., Phone No. etc.

[C] Marking Scheme :

12. For each right answer you will be **awarded 4 marks** if you darken the bubble corresponding to the correct answer and **zero marks** if no bubble is darkened. In case of bubbling of incorrect answer, **minus one (-1)** mark will be awarded.


Best of Luck

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PART - I MATHEMATICS**(SINGLE CORRECT ANSWER TYPE)**

- This Part contains **TEN** questions.
- Each question has **FOUR** options [A], [B], [C] and [D]. **ONLY ONE** of these four options is correct.
- For each question, darken the bubble(s) corresponding to all the correct option(s) in the OMR.

Q.1 If n is an even natural number, then the largest natural number by which $n(n+1)(n+2)$ is divisible, is

- (A) 6 (B) 8 (C) 12 (D) 24

Q.2 If one zero of the quadratic polynomial $2x^2 - 8x - m$ is $\frac{5}{2}$, then the other zero is

- (A) $\frac{2}{3}$ (B) $-\frac{2}{3}$ (C) $\frac{3}{2}$ (D) $-\frac{15}{2}$

Q.3 The solution of the pair of equations $\frac{a}{x} - \frac{b}{y} = 0$ and $\frac{ab^2}{x} + \frac{a^2b}{y} = a^2 + b^2$ is

- (A) $x = a$ (B) $y = -b$ (C) $x = -a$ (D) None of these

Q.4 The equation $k^2x^2 + kx + 1 = 0$ has

- (A) one real root (B) two real roots
(C) no real roots (D) None of these

Q.5 If m^{th} term of an A.P. is $\frac{1}{n}$ and n^{th} term is $\frac{1}{m}$, then the sum of first mn terms is

- (A) $mn + 1$ (B) $\frac{mn + 1}{2}$ (C) $\frac{mn - 1}{2}$ (D) $\frac{mn - 1}{3}$

Space for rough works

- Q.6 The point (x, y) lies on the line joining $(3, 4)$ and $(-5, -6)$, if
- (A) $4x - 5y + 1 = 0$ (B) $2x + 5y - 1 = 0$
 (C) $5x - 4y + 1 = 0$ (D) $2x - 3y + 1 = 0$
- Q.7 If $\frac{x}{a}\cos\theta + \frac{y}{b}\sin\theta = 1$, $\frac{x}{a}\sin\theta - \frac{y}{b}\cos\theta = 1$, then
- (A) $x^2 + y^2 = a^2 + b^2$ (B) $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 2$
 (C) $a^2x^2 + b^2y^2 = 1$ (D) None of these
- Q.8 The angle of elevation of the top of a tower standing on a horizontal plane from a point A is α . After walking a distance d towards the foot of the tower the angle of elevation is found to be β . The height of the tower is
- (A) $\frac{d}{\cot\alpha + \cot\beta}$ (B) $\frac{d}{\cot\alpha - \cot\beta}$
 (C) $\frac{d}{\tan\beta - \tan\alpha}$ (D) $\frac{d}{\tan\beta + \tan\alpha}$
- Q.9 The area of the circle is 220 cm^2 . The area of a square inscribed in it is
- (A) 49 cm^2 (B) 70 cm^2 (C) 140 cm^2 (D) 150 cm^2
- Q.10 A number x is chosen at random from the numbers $-3, -2, -1, 0, 1, 2, 3$, the probability that $|x| < 2$ is
- (A) $\frac{5}{7}$ (B) $\frac{2}{7}$ (C) $\frac{3}{7}$ (D) $\frac{1}{7}$

Space for rough works

PART - II SCIENCE**(SINGLE CORRECT ANSWER TYPE)**

- This Part contains **TEN** questions.
- Each question has **FOUR** options [A], [B], [C] and [D]. **ONLY ONE** of these four options is correct.
- For each question, darken the bubble(s) corresponding to all the correct option(s) in the OMR.

- Q.11 If a ray of light is incident normally on the glass slab then angle of refraction will be :
- (A) 0° (B) 45° (C) 60° (D) 90°
- Q.12 The image formed by a concave mirror is observed to be virtual, erect and larger than the object. Where should be the position of the object ?
- (A) Between the principal focus and the centre of curvature
 (B) At the centre of curvature
 (C) Beyond the centre of curvature
 (D) Between the pole of the mirror and its principal focus.
- Q.13 The frequency of light of wave length 5000 \AA is
- (A) $1.5 \times 10^5 \text{ Hz}$ (B) $6 \times 10 \text{ Hz}$ (C) $6 \times 10^{14} \text{ Hz}$ (D) $7.5 \times 10^{15} \text{ Hz}$
- Q.14 An object of height 4.0 cm is placed at a distance 24 cm in front of a convex lens of focal length 8 cm. The height of image is
- (A) 1 cm (B) 2 cm (C) 3 cm (D) 4 cm
- Q.15 Which of the following are exothermic processes?
- (i) Reaction of water with quick lime (ii) Dilution of an acid
 (iii) Evaporation of water (iv) Sublimation of camphor (crystals)
- (A) (i) and (ii) (B) (ii) and (iii)
 (C) (i) and (iv) (D) (iii) and (iv)

Space for rough works

- Q.16 A dilute ferrous sulphate solution was gradually added to the beaker containing acidified permanganate solution. The light purple colour of the solution fades and finally disappears. Which of the following is the correct explanation for the observation?
- (A) KMnO_4 is an oxidising agent, it oxidises FeSO_4
- (B) FeSO_4 acts as an oxidising agent and oxidises KMnO_4
- (C) The colour disappears due to dilution; no reaction is involved
- (D) KMnO_4 is an unstable compound and decomposes in presence of FeSO_4 to a colourless compound.
- Q.17 Which one of the following processes involve chemical reactions?
- (A) Storing of oxygen gas under pressure in a gas cylinder
- (B) Liquefaction of air
- (C) Keeping petrol in a china dish in the open
- (D) Heating copper wire in presence of air at high temperature
- Q.18 Calcium phosphate is present in tooth enamel. Its nature is
- (A) basic (B) acidic (C) neutral (D) amphoteric
- Q.19 Use of pesticides and fertilizers causes
- (A) soil pollution (B) water pollution
- (C) both (A) & (B) (D) None of these
- Q.20 Which of the following is a mismatch ?
- (A) Leprosy-Bacterial infection (B) AIDS-Bacterial infection
- (C) Malaria-Protozoan infection (D) Elephantiasis- Nematode infection

Space for rough works

PART - III MENTAL ABILITY**(SINGLE CORRECT ANSWER TYPE)**

- This Part contains **FIVE** questions.
- Each question has **FOUR** options [A], [B], [C] and [D]. **ONLY ONE** of these four options is correct.
- For each question, darken the bubble(s) corresponding to all the correct option(s) in the OMR.

- Q.21 If **MANAGER** is coded as **QPLPTOB** in a code language, how would you code **RANGE** in that code language ?
- (A) BPLTO (B) BPQTO
(C) BPTQO (D) BLTPO
- Q.22 If 26th January 1995 was Sunday then at what day would be on 1 April 1997.
- (A) Monday (B) Friday
(C) Thursday (D) Sunday
- Q.23 If $2 \uparrow 2 \rightarrow 4 = 1$, $4 \uparrow 2 \rightarrow 8 = 2$, then what will be the value of $6 \uparrow 2 \rightarrow 4 = ?$
- (A) 9 (B) 10
(C) 8 (D) 12
- Q.24 How many pairs of letters are there in the word, '**CONTRACTOR**' which have as many letters between them in the word as in alphabet ?
- (A) One (B) Three
(C) Four (D) More than four
- Q.25 Pointing towards a person in a photograph, Mukesh said, "She is the only daughter of the mother of my brother's sister." How is that person related to Mukesh ?
- (A) Mother (B) Cousin (C) Sister (D) Aunt

Space for rough works



SAMPLE TEST PAPER ANSWER KEY

STAGE-1_(CLASS 10th)

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|---------|---------|---------|---------|
| 1. (D) | 2. (C) | 3. (A) | 4. (C) |
| 5. (B) | 6. (C) | 7. (B) | 8. (B) |
| 9. (C) | 10. (C) | 11. (A) | 12. (D) |
| 13. (C) | 14. (B) | 15. (A) | 16. (A) |
| 17. (D) | 18. (A) | 19. (C) | 20. (B) |
| 21. (A) | 22. (B) | 23. (A) | 24. (C) |
| 25. (C) | | | |

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V-MAT REWARDS & RECOGNITION

