# CATSE
TALENT SEARCH EXAM

INSTRUCTIONS

1. Immediately fill in the particulars on this page of the Test Booklet with Blue/Black Ball Point Pen. Use of pencil is strictly prohibited.
2. Test duration is ONE HOUR (60MINUTES)
3. The Test Booklet consists of 40 questions of 4 marks each. The maximum marks are 160.
4. There are four sections in the question paper.
   The distribution of question, subject wise in each part is mentioned below.

SCIENCE	– 10 Questions
SOCIAL SCIENCE	– 10 Questions
MATHEMATICS	– 10 Questions
MENTAL ABILITY	– 10 Questions

5. Candidates will be awarded Four marks (+4) each for indicated correct response of each Question& One mark (-1) deduct for indicated incorrect response. No deduction from the total score will be made if no response is indicated.
6. No candidate is allowed to carry any textual material, printed or written, bits of papers, mobile phone, any electronic device etc.
7. After the completion of the test, the candidate must hand over the Answer Sheet to the Invigilator on duty in the Room/Hall. However, the candidates are allowed to take away this Test Booklet with them.
8. Do not fold or make any stray marks on the Answer sheet.

Name : _____ Class : _____ Roll No. _____
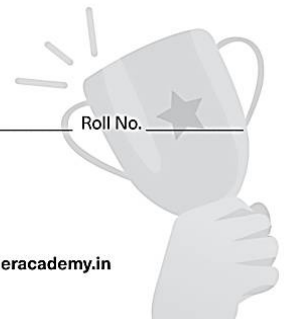
SCIENCE

1. Distance time equation for uniform accelerated motion is

(a) $S = ut + \frac{1}{2} at^2$

(b) $S = u + at$

(c) $S = u + at^2$

(d) $S = ut^2 + \frac{1}{2} at^2$

2. Unit of momentum is

(a) kg ms^{-1}

(b) kg m

(c) ms^{-1}

(d) kg s^{-1}

3. Pressure is

(a) Thrust/area

(b) $\frac{Area}{Thrust}$

(c) $\frac{mass}{Area}$

(d) None of these

4. Atomicity of KM_nO_4 is

(a) 4

(b) 5

(c) 6

(d) 7

5. Molecular mass of "**X**" is 106, **X** can be

(a) $CaCo_3$

(b) So_3

(c) $Na_2 CO_3$

(d) NaCl
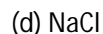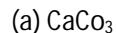
6. Bose Einstein condensate have

(a) Very low kinetic energy

(b) Low kinetic Energy

(c) High kinetic energy

(d) Highest kinetic energy

7. Which of the following are examples of prokaryotes?

(a) Algae

(b) Fungi

(c) Bacteria

(d) Protozoa.

8. Water translocation in plant occur through

(a) Xylem
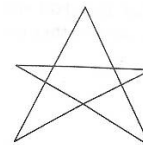
(b) Phloem

(c) By both

(d) Cambium

37. How many tringles are there in the figure given below?
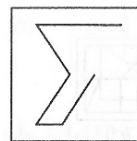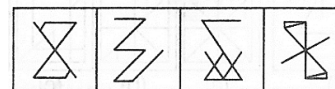
(a) 6

(b) 7

(c) 10

(d) 8

38. In the given question, you are given a figure (X) followed by four figures (a), (b), (c) and (d) such that (X) is embedded in one of them. Trace out the correct alternative.

Problem figure

(X)

Answer figure

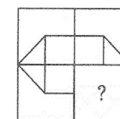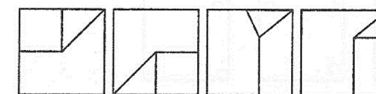| (a) | (b) | (c) | (d) |

39. In this question, problem figure is given on the left side of the line, which is incomplete. One, out of the four answer figures (a), (b), (c) and (d) can complete the same. You have to locate the answer which if inserted in the problem figure without changing the direction completes the same.
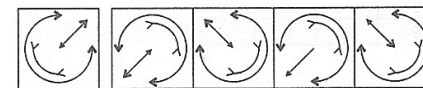
Problem figure

?

Answer figure

| (a) | (b) | (c) | (d) |

40. Choose the correct mirror image of the figure (X) form amongst the four alternatives (a), (b), (c) and (D) given along with it.

(x)　(a)　**(b)**　(c)　(d)

MENTAL ABILITY

31. In a certain code, 'FORGET' is written as 'DPPHCU'. How would 'DOCTOR' be written in that code?
(a) BPAUPS
(b) EMDRPP
(c) BPAUMS
(d) BRARPP

32. 17, 25, 41, 65, 97, ...
(a) 147
(b) 100
(c) 137
(d) 98

33. Ram is the brother of Deepak, Sunita is sister of Rajesh. Deepak is the son of Sunita. How is Ram related to Sunita?
(a) Son
(b) Brother
(c) Nephew
(d) Father

34. Insert the missing letter or numerical value in the given question

84			81			88	
14	12		18	09		?	11

(a) 12
(b) 16
(c) 32
(d) 20

35. Rajni is 6th from either end of a row of girls. How many girls are there in that row?
(a) 10
(b) 12
(c) 13
(d) 11

36. If + means ×, − means ÷, × means − and ÷ means +, then the value of 32÷8−4×12+4 is
(a) -14
(b) -41
(c) -40
(d) -12

9. Which of the following is not a bacterial disease?
(a) Cholera
(b) Tuberculosis
(c) Anthrax
(d) Influenza.

10. Plasmodium is an example of:
**(a) Protozoa**
(b) Virus
(c) Worm
(d) Bacteria.

SOCIAL SCIENCE

11. Slavery was finally abolished in French colonies in..............
(a) 1748
(b) 1749
(c)1848
(d) 1794

12. Winter place was the residence of
(a) Trotsky
(b) Lenin
(c) Tsar
(d) kerenskii

13. In Which sea Lakshadweep Island are located?
(a) Bay of Bengal
(b) Arabian Sea
(c) Red Sea
(d) Mediterranean Sea

14. The old alluvium on the slightly elevated terraces is known as
(a) Bhangar
(b) Terai
(c) Khaddar
(d) Bhabar

15. Rivers that has water throughout the year is called
(a) Depositional river
(b) radial river
(c) perennial river
(d) erosional river

16. Identify the country which practices unfair means in the elections.
(a) Russia
(b) Mexico
(c) Zimbabwe
(d) China

17. The correct meaning of the draft is
(a) final document
(b) preliminary version of a document
(c) unofficial document
(d) legal document

18. The boundaries of a constituency is decided on the basis of
(a) Population
(b) Culture
(c) Language
(d) number of village

19. "Sarva Siksha Abhiyan" is related to
(a) Education
(b) health
(c) Technology
(d) Income

20. Who is considered as poor?
(a) A rich landlord
(b) A businessman
**(c) A landless labourer**
(d) A teacher

MATHEMATICS

21. The value of $(21 + 2^2)^{\frac{1}{2}} + (72 + 3^2)^{1/4}$ is
(a) 14
(b) 8
(c) 28
(d) 34

22. If $x - 3$ is a factor of $x^2 - ax - 15$, then $a =$
(a) -2
(b) 5
(c) -5
(d) 3

23. The perpendicular distance of the point $P(4,3)$ from y- axis is
(a) 4
(b) 3
(c) 5
(d) none of these

24. The graph of the equation $2x + 3y = 12$ is a line which meets the x axis at the points
(a) (4,0)
(b) (0,4)
(c) (0,6)
(d) (6,0)

25. In Fig, $AB \perp BE$ and $FE \perp BE$. If $BC = DE$ and $AB = EF$, then $\triangle ABD$ is congruent to
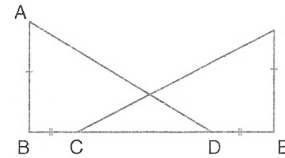
(a) $\triangle EFC$
(b) $\triangle ECF$
(c) $\triangle CEF$
(d) $\triangle FEC$

26. Which of the following is irrational?
(a) $\sqrt{\dfrac{4}{9}}$
(b) $\dfrac{4}{5}$
(c) $\sqrt{7}$
(d) $\sqrt{81}$

27. The value of $\sqrt{5 + 2\sqrt{6}}$, is
(a) $\sqrt{3} - \sqrt{2}$
(b) $\sqrt{3} + \sqrt{2}$
(c) $\sqrt{5} + \sqrt{6}$
(d) none of these

28. If $f(x - 2) = 2x^2 - 3x + 4$, then the remainder when $f(x)$ is divided by $(x - 1)$, is
(a) 3
(b) 9
(c) 13
(d) -13

29. In Fig, if $l_1 \| l_2$, what is $x + y$ in terms of w and z?
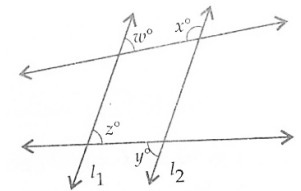
(a) $180 - w + z$
(b) $180 + w - z$
(c) $180 - w - z$
(d) $180 + w + z$

30. $(a + b + c)^2 + (a + b - c)^2 + 2(c^2 - a^2 - b^2 - 2ab)$ is equal to
(a) $4c^2$
(b) $4a^2$
(c) $4b^2$
(d) $(a + b + c)^2$