Jagran

Roll No.:

Maximum Marks: 180
Maximum Time: 90 (+30) minutes

CLASS
11
SCIENCE

INDIAN INTELLIGENCE TEST ™

An Innovative Aptitude Test

SEASON 10

Knowledge Partner

AMRITA
VISHWA VIDYAPEETHAM
DERIVED TO BE UNIVERSITY UNDER SECTION 3 OF UGC ACT, 1956

Amaravati I Amritapuri I Bengaluru I Chennai
Coimbatore I Faridabad

IDENTIFYING
THE RIGHT CAREER

INSTRUCTIONS FOR CANDIDATE

General Instructions for Candidates
1. Read all instructions carefully. This Question Paper comprises of two sections:
   Section I: Multiple Intelligence Test (40 questions) [20 minutes]
   Section II: Scholastic Aptitude Test (60 questions) [90 minutes]
2. Write Your Roll Number on the box provided above and in OMR Sheet.
3. 10 Min will be provided to fill the OMR Sheet before the start of Exam.
4. Students must fill all the personal details carefully in the OMR Sheet
5. Read all the instruction on OMR sheet as well before start of exam.

Instructions for Section I
1. Students will be allocated maximum of 20 min to complete this section.
2. Questions in Section I do not carry any marks.
3. Answering all questions in Section I is compulsory.
4. You need to answer all the question in this section, truthfully based on your preference. fake responses will lead to misinterpretation of your intelligence type.
5. Multiple Intelligence Report shall be provided on the basis of Section I.

Instructions for Section II
1. Students will be allocated maximum of 90 min to complete this section.
2. Question in Section II carry 3 Marks Each.
3. Answering all questions is not compulsory in Section II.
4. For each correct answer student will be awarded 3 marks and for each incorrect answers, 1 mark would be deducted.
5. For unanswered questions, no mark would be awarded or deducted.
6. Rank will be provided on the basis of Section II.
7. Use of calculator, mobile phones or log tables is not permitted.
8. There is only ONE correct answer. Choose only ONE option for an answer.
9. Fill the required details clearly on Answer (OMR) Sheet & do not overwrite.
10. Rough work should be done in the blank space provided on the last page.
11. Return both Answer & Question sheet to the invigilator at the end of the exam.
12. Any use of unfair means in the test will result in termination of the candidate.

Instructions for filling OMR Sheet
1. Fill the OMR sheet using HB Pencil only.
2. To mark your choice of answers, Darken the circles completely in the Answer (OMR) Sheet corresponding to the question you are answering.
3. Darken only one circle, and keep rest of the sheet clean.
4. In case if wrong circle is darkened, completely erase the markings.
5. Ensure all personal details are filled in OMR Sheet before starting the exam.

| SECTION-I | Que.- 40 |

MULTIPLE INTELLIGENCE TEST

| SECTION-II | Que.- 60 |

APTITUDE TEST

▸ LOGICAL REASONING   ▸ GENERAL KNOWLEDGE   ▸ PHYSICS

▸ CHEMISTRY   ▸ MATHEMATICS/ BIOLOGY

MULTIPLE INTELLIGENCE TEST

Section-I: Multiple Intelligence Test

Directions : (1 to 35) These are general statements. You have to mark options A, B, C or D in the OMR sheet as per your preference.

A = Mostly Disagree

B = Slightly Disagree

C = Slightly Agree

D = Mostly Agree

1. I enjoy word games like Scrabble and crossword puzzles.
2. I can easily add numbers in my head.
3. People say I have a good singing voice.
4. I like to listen to someone read a story aloud.
5. I like to spend time alone.
6. I use my hands a lot when talking or describing something.
7. I prefer books that have lots of pictures.
8. The best thing about school is getting to be with my friends all day.
9. I know a song after hearing it only once or twice.
10. I enjoy doing experiments.
11. It's easy for me to write 150 words or more for an essay.
12. I enjoy board games such as chess or checkers.
13. I study better if music is playing.
14. I like to act things out.
15. I enjoy making things with clay or play dough.
16. I have more than one favorite teacher.
17. I like school activities to follow the same order each day.
18. I listen to music on radio, cassettes, or CD's often.
19. I doodle or draw often during class.
20. Reading charts, maps, and graphs is easy.
21. I know what I want to be when I grow up and what I need to do to become it.
22. I have a secret place.
23. English and Social Studies are my best subjects.
24. I automatically tap my feet or hands along with music.
25. It's easy for me to remember names.
26. My friends ask me to help them with their prob lems.
27. I like to watch TV or movies.
28. I love to run, jump, or dance.
29. Math and Science are my best subjects.
30. I like to play games with other people.
31. I like art activities.
32. I have 2 or more "best" friends.
33. Adults say I'm stubborn or strong-willed.
34. It's hard to sit still for long periods of time.
35. I like to do my work alone.

Directions : (36 to 40) These are general statements. You have to mark options A, B, C or D in the OMR sheet as per your preference.

A = Very Frequently

B = Occasionally

C = Rarely

D = Very Rarely

36. I use computer.
37. I use internet for studies.
38. I play games on computer.
39. I watch movies on computer.
40. I wish to use computers for overall knowledge enhancement.

QUESTIONS 1 TO 20 : LOGICAL REASONING

1. Direction: If '+' is '×', '−' is '+', '×' is '÷' and '÷' is '−', then answer the following questions.
   21÷8+2−12×3=?
   (A) 14
   (B) 9
   (C) 13.5
   (D) 11

2. In a certain code, COVALENT is written as BWPDUOFM and FORM is written as PGNS. How will SILVER be written in that code?
   (A) MJTUDQ
   (B) KHRSFW
   (C) MJTWFS
   (D) MJTSFW

3. Direction: Study the following letters and their corresponding digit codes followed by certain conditions of coding and answer the questions given below them by finding out which of the digit combinations given in (a), (b), (c) and (d) is the coded form of the letter - group given in each question and mark your answer accordingly.

Letter	P	N	A	J	I	R	E	B	U	K
Code	5	3	9	1	4	6	2	7	0	8

Conditions:
   (1) IF both the first and the last letters in the group are vowels, both should be coded as .
   (2) If both the first and the last letters in the group are consonant, both should be coded as #.:
   (A) KUNAJB 803917   (B) 0391
   (C) #0391#   (D) #0391$

4. Which of the following sets is best represented in the given diagram?

   (A) Animals, Insects, Cockroaches
   (B) Animals, Males, Females and Hermaphrodites
   (C) States, Districts, Union Territories
   (D) Country, States, Districts

5. Rohit is seventeenth from the left end of a row of 29 boys and Karan is seventeenth from the right end in the same row. How many boys are there between them in the row?
   (A) 3
   (B) 5
   (C) 6
   (D) Data inadequate

6. If 1st October is Sunday, then 1st November will be-
   (A) Monday
   (B) Tuesday
   (C) Wednesday
   (D) Thursday

7. Arrange the words given below in a meaningful sequence. 1. Income   2. Status   3.Education   4.Well-being 5.Job.
   (A) 3, 1, 5, 2, 4
   (B) 1, 3, 2, 5, 4
   (C) 1, 2, 5, 3, 4
   (D) 3, 5, 1, 2, 4

8. Six persons A, B, C, D, E and F are standing in a circle. B is between D and C. A is between E and C. F is to the right of D. Who is between A and F?
   (A) B
   (B) C
   (C) D
   (D) E

Directions (9-13): Read the following passage to answer the questions.

Anita, Mahima, Rajan, Lata and Deepti are five cousins. Anita is twice as old as Mahima. Rajan is half the age of Mahima. Anita is half the age of Deepti and Rajan is twice the age of Lata.

9. Who is the youngest?
   (A) Deepti   (B) Rajan
   (C) Lata   (D) Anita

10. Who is the eldest?
   (A) Deepti   (B) Lata
   (C) Anita   (D) All of these

11. Which of the following pairs of persons are of the same age?
   (A) Mahima and Lata
   (B) Anita and Mahima
   (C) Mahima and Rajan
   (D) All of these

12. Anita is younger than?
    (A) Rajan　　　　　　　(B) Mahima
    (C) Deepti　　　　　　　(D) All of these

13. If Mahima is 16 years old, then what is the age of Lata?
    (A) 4 years　　　　　　　(B) 5 years
    (C) 7 years　　　　　　　(D) 14 years

14. If Neha says, "Amrita's father Raj is the only son of my father-in-law Mahesh", then how is Bindu, who is the sister of Amrita, related to Mahesh?
    (A) Daughter-in-law
    (B) Daughter

(C) None of these
(D) Wife

15. The contrapositive of the statement 'If Chandigarh is the capital of Punjab, then Chandigarh is in India' is:
    (A) If Chandigarh is not in India, then Chandigarh is not the capital of Punjab.
    (B) If Chandigarh is in India, then Chandigarh is the capital of Punjab.
    (C) If Chandigarh is not the capital of Punjab, then Chandigarh is not the capital of India.
    (D) If Chandigarh is the capital of Punjab, then Chandigarh is not in India.

QUESTIONS 16 TO 25 : GENERAL KNOWLEDGE

16. Yellow colour of papaya is due to?
    (A) Caricaxanthin
    (B) Carotene
    (C) Lycopene
    (D) Papain

17. What is the Study of human beauty called?
    (A) Argology
    (B) Kalology
    (C) Agrostology
    (D) Oncology

18. Who is known as the ' Saint of the gutters'?
    (A) B.R.Ambedkar
    (B) Mother Teresa
    (C) Mahatma Gandhi
    (D) Baba Amte

19. What is the new name of the ChhatrapatiShivaji International Airport?
    (A) Indira Gandhi International Airport
    (B) Devi AhilyabaiHolkar Airport
    (C) ChhatrapatiShivajiMaharaj International Airport
    (D) ChaudharyCharan Singh Airport

20. The National Panchayati Raj Diwas is celebrated on which date in India?
    (A) 23 April
    (B) 22 April
    (C) 20 April
    (D) 24 April

21. 6 months day and 6 months night - Country Name?
    (A) Nepal
    (B) Tibet
    (C) Norway
    (D) Iceland

22. Who became the Prime Minister-elect after the 2023 New Zealand general election?
    (A) Chris Hipkins
    (B) Christopher Luxon
    (C) Andrew Fisher
    (D) George Reid

23. Where did the Indian Air Force celebrate its 91st anniversary on 8 October 2023?
    (A) New Delhi
    (B) Kolkata
    (C) Prayagraj
    (D) Mumbai

24. Which event did Shooter PalakGulia win a gold medal in at the Asian Games?
    (A) Women's shot put
    (B) Men's squash
    (C) Women's 10m air pistol
    (D) Men's rifle 3-P team

25. Which legislative bodies are covered by the Women's Reservation Bill?
    (A) LokSabha, State Legislative Councils, and Municipal Corporations
    (B) RajyaSabha, State Legislative Assemblies, and Panchayati Raj Institutions
    (C) LokSabha, State Legislative Assemblies, and Delhi Assembly
    (D) Gram Panchayats, ZilaParishads, and Municipalities

26. Which one of the following pairs of quantities and their units is a proper match?
(A) Magnetic Flux - weber
(B) Capacitance - henry
(C) Impulse – N/Sec
(D) Power - Farad

27. The dimension of torque are-
(A) $[ML^2T^{-1}]$
(B) $[M^2L^2T^{-2}]$
(C) $[MLT^{-2}]$
(D) $[ML^2T^{-2}]$

28. Random error can be eliminated by-
(A) Taking large number of observations and then their mean
(B) Measuring the quantity with more than one instrument
(C) Eliminating the cause
(D) Careful observation

29. Which of the following is a one dimensional motion :
(A) Motion of train on a straight track
(B) Motion of satellite
(C) Motion of air particle
(D) Motion of snake

30. If $\vec{A} = \hat{i} + \hat{j} + \hat{k}$ and $\vec{B} = 2\hat{i} - \hat{j} + 4\hat{k}$ then the unit vector along $\vec{A} + \vec{B}$ is

(A) $\dfrac{3\hat{i} + 5\hat{k}}{\sqrt{34}}$

(B) $\dfrac{3\hat{i} + 5\hat{k}}{\sqrt{24}}$

(C) $\dfrac{3\hat{i} - 5\hat{k}}{\sqrt{34}}$

(D) None of these

31. Which of the following must be known in order to determine the power output of an automobile?
(A) Force exerted and distance of motion
(B) Mass and amount of work performed
(C) Work performed and elapsed time of work
(D) Final velocity and height

32. In a rotation of a rigid body about a fixed axis, every….A… of body moves in ….B…, which lies in a plane ….C…. to the axis and has its centre on the axis. Here, A, B and C refer to-
(A) Particle, circle and perpendicular
(B) Particle, perpendicular and perpendicular
(C) Circle, Particle and perpendicular
(D) Particle, perpendicular and circle

33. The height of the point vertically above the earth's surface, at which acceleration due to gravity becomes 1% of its valueat the earth's surface is (Radius of the earth = R)
(A) 19 R
(B) 10 R
(C) 9 R
(D) 8 R

34. An iron tyre is to be fitted on to a wooden wheel 1min diameter. The diameter of tyre is 6 mm smaller than that of wheel. The tyre should be heated so that its temperature increases by a minimum of (the coefficient of cubical expansion of iron is 3.6×10^{-5} / °C)
(A) 1000°C
(B) 334°C
(C) 500°C
(D) 167°C

35. What is the effect of humidity on sound waves when humidity increases?
(A) Speed of sound wave is more
(B) Speed of sound wave is less
(C) Speed of sound wave remains same
(D) Speed of sound wave becomes zero

36. Two moles of water contains _____ molecules.
    (A) 6.02×10^{23}
    (B) 1.204×10^{24}
    (C) 3.01×10^{23}
    (D) 7.02×10^2

37. Which one of the following set of units represents the smallest and largest amount of energy respectively ?
    (A) eV and L-atm
    (B) erg and cal
    (C) J and erg
    (D) cal and eV

38. A sample was weighted using two different balances. The results were
    (i) 3.929 g   (ii) 4.0 g
    How would the weight of the sample be reported ?
    (A) 3.93 g
    (B) 3.9 g
    (C) 3 g
    (D) 3.929 g

39. An organic compound contains 49.3% carbon, 6.84% hydrogen and its vapour density is 73. Molecular formula of compound is :
    (A) $C_3H_5O_2$
    (B) $C_3H_{10}O_2$
    (C) $C_3H_{10}O_2$
    (D) $C_6H_{10}O_4$

40. Which of the following statement is not correct about the characteristics of cathode rays?
    (A) Characteristics of cathode rays depend upon the nature of gas present in the cathode ray tube
    (B) Characteristics of cathode rays do not depend upon the material of electrodes in cathode rat tube
    (C) They travel in straight line in the absence of an external electrical or magnetic field
    (D) They start from the cathode and move towards the anode

41. A _____ in thermodynamics refers to that part of universe in which observations are made and remaining universe constitutes the _____ :
    (A) System, Systems
    (B) System, boundary
    (C) Surroundings, system
    (D) System, surroundings

42. When a strip of metallic zinc is placed in an aqueous solution of copper nitrate the blue colour of the solution disappear due to formation of :
    (A) Cu^{2+}
    (B) Cus
    (C) ZnS
    (D) Zn^{2+}

43. Oxidation number of N in HNO3 is?
    (A) +5
    (B) +3.5
    (C) -3.5
    (D) -5

44. Which of the following pairs are isobars?
    (A) $_{92}U^{235}$, $_{94}Pu^{239}$
    (B) $_{36}Kr^{83}$, $_{36}Kr^{84}$
    (C) $_{10}Ne^{19}$, $_{9}F^{19}$
    (D) $_{58}Ce^{139}$, $_{58}Ce^{140}$

45. Which of the following is not true about a reversible reaction -?
    (A) Number of moles of reactants and products is always equal
    (B) It can be attained only in a closed container
    (C) It cannot be influenced by a catalyst
    (D) The reaction does not proceed to completion

(only the students of PCM stream have to attempt)

46. $\lim_{x \to 4} (\sqrt{x}+1)(2x-3)/2x^3+x-3$ is

    (A) 0
    (B) 1/10
    (C) 1
    (D) None

47. The observation 29, 32, 48, 50, x, x+2, 72, 78, 84, 95 are arranged in ascending order. What is the value of x if the median of the data is 63?
    (A) 61
    (B) 62
    (C) 62.5
    (D) 63

48. The domain and range of the real function f defined by $f(x) = (4 - x)/(x - 4)$ is given by
    (A) Domain = R, Range = {–1, 1}
    (B) Domain = R – {1}, Range = R
    (C) Domain = R – {4}, Range = {– 1}
    (D) Domain = R – {– 4}, Range = {–1, 1}

49. $\sin x + i\cos 2x$ and $\cos x – i \sin 2x$ are conjugate to each other for:

    (A) $x = n\pi$
    (B) $x = [n + (1/2)] (\pi/2)$
    (C) $x = 0$
    (D) No value of x

50. The coefficient of y in the expansion of $(y2+(c/y))5$ is:
    (A) 10c
    (B) 29c
    (C) $10c^3$
    (D) $20c^3$

51. The focus of the parabola $y2 = 8x$ is:
    (A) (0, 2)
    (B) (2, 0)
    (C) (0, -2)
    (D) (-2, 0)

52. If $\sin \theta$ and $\cos \theta$ are the roots of $ax2 – bx + c = 0$, then the relation between a, b and c will be
    (A) $a2 + b2 + 2ac = 0$
    (B) $a2 – b2 + 2ac = 0$
    (C) $a2 + c2 + 2ab = 0$
    (D) $a2 – b2 – 2ac = 0$

53. The number of ways 4 boys and 3 girls can be seated in a row so that they are alternate is-
    (A) 12
    (B) 104
    (C) 144
    (D) 256

54. If the variance is 625, what is the standard deviation?
    (A) 5
    (B) 15
    (C) 25
    (D) 30

55. Three identical dice are rolled. What is the probability that the same number will appear on each of them?
    (A) 1/6
    (B) 1/36
    (C) 1/18
    (D) 3/28

56. The equation of a straight line that passes through the point (3, 4) and perpendicular to the line $3x+2y+5=0$ is
    (A) 2x-3y+6 = 0
    (B) 2x+3y+6 = 0
    (C) 2x-3y-6 = 0
    (D) 2x+3y-6 = 0

57. The 3rd term of G.P is 4. Then the product of the first 5 terms is:
    (A) 43
    (B) 44
    (C) 45
    (D) 0

58. If a complex number z lies in the interior or on the boundary of a circle of radius 3 units and centre (– 4, 0), the greatest value of $|z +1|$ is
    (A) 4
    (B) 6
    (C) 3
    (D) 10

59. If $f(x) = x3 – (1/x3)$, then $f(x) + f(1/x)$ is equal to
    (A) $2x^3$
    (B) $2/x^3$
    (C) 1
    (D) 0

60. If P (n): "$49n + 16n + k$ is divisible by 64 for $n \in$ N" is true, then the least negative integral value of k is
    (A) 1
    (B) -2
    (C) -1
    (D) -3

(only the students of PCB stream have to attempt)

46. What is a homonym?
    (A) Identical name of two different taxa
    (B) Two or more names of same taxon
    (C) Name given to a taxon in local language
    (D) Species name repeats the generic name

47. Bentham and Hooker gave which system of classification?
    (A) Numerical
    (B) Phylogenetic
    (C) Artificial
    (D) Natural

48. ICBN stands for _____.
    (A) International Code of Botanical Nomenclature
    (B) Indian Code of Botanical Nomenclature
    (C) Indian Congress of Biological names
    (D) Indian Congress of Botanical Nomenclature

49. Plants that possess spores and embryo but lack vascular tissues and seeds?
    (A) Rhodophyta
    (B) Bryophyta
    (C) Pteridophyta
    (D) Phaeophyta

50. Pick the mismatched pair
    (A) Cycas – Dioecious
    (B) Equisetum – Homosporous
    (C) Salvinia – Heterosporous
    (D) Pinus – Dioecious

51. The transport of male gametes in bryophytes and pteridophytes occurs through
    (A) Wind
    (B) Water
    (C) Birds
    (D) Insects

52. A fruit developed from a condensed inflorescence is-
    (A) Composite fruit
    (B) Simple fruit
    (C) Aggregate fruit
    (D) Etaerio

53. Mineral associated with cytochrome is-
    (A) Mg   (B) Cu and Ag
    (C) Fe   (D) Cu

54. When there is an increase in the condensation of chromatin during the process of cell division –
    (A) Heterochromatin increases
    (B) Euchromatin increases
    (C) Differentiation of euchromatin& heterochromatin decreases
    (D) Differentiation of euchromatin& heterochromatin increases

55. The main function of guard cells is to help with
    _____
    (A) Transpiration
    (B) Guttation
    (C) Transcription
    (D) None of the above

56. One of the following is not a criterion for an element to be termed as "essential":
    (A) The element is not required for growth and development
    (B) The function of a particular element cannot be replaced with another
    (C) The element should be used in plant metabolism
    (D) None of the above

57. Human skin cannot function as a respiratory organ because:
    (A) It is not permeable to O2 and CO2
    (B) It is rather thick
    (C) It is dry
    (D) All of the above

58. _____ is a blood disorder where the haemoglobin is defective:
    (A) Heterochromia
    (B) Alopecia
    (C) Haemolysis
    (D) Sickle cell anaemia

59. Severe loss of blood due to trauma is called
    (A) Exsanguination
    (B) Haemolysis
    (C) Concussion
    (D) None of the above

60. The hormone that participates in metabolizing calcium and phosphorous are called _____
    (A) Glucagon   (B) Calcitonin
    (C) Glycogen   (D) None of the above

ROUGH WORK