

**J&K SAINIK SCHOOL MANASBAL
TEST BOOKLET-XI**

ROLL NUMBER

160008

Test Booklet No. & Series

160008

D

Name of the Candidate:

Signature of the Candidate:

Time $2\frac{1}{2}$ Hours

Maximum Marks: 280

GENERAL INSTRUCTIONS FOR CANDIDATE

1. This booklet comprises of five sections (**22 Pages**) comprising of **140 Questions** with Section A - **50** (Mathematics), B - **35** (Reasoning), C - **30** (Science), D - **25** (English). Each question has 2 marks for correct answer.
2. A separate OMR sheet will be provided to mark the correct answer at the proper place on the OMR sheet.
3. Use only blue/black ball pen to fill your OMR sheet. Use of pencil is not allowed.
4. For every question there are four probable answers out of which only one is the most appropriate / correct. The candidate is required to select the correct answer and darken the bubble against the correct option provided against each question in the OMR sheet. For example, if your answer for a particular question is option C, fill the bubble as given below.



5. Overwriting, erasing or cutting on OMR is not allowed. Using of correction fluid/whitener is also not allowed on OMR.
6. Rough work must be done only on this Booklet at the portion specified for the same.
7. The time allowed is 150 minutes.
8. There is no Negative marking.
9. A candidate is eligible for admission if he secures a minimum of **25% marks** in each section and **40% marks** in aggregate of all the sections. However, admission will be based on relative merit of the candidate followed by medical fitness and verification of requisite documents.

Signature of Invigilator

Signature of Centre Superintendent

SEAL

SECTION A: MATHEMATICS**(Total Questions: 50****Max Marks: 100)**

Q1. If a line divides two sides of a triangle in the same ratio, the line is-

- (a) perpendicular
- (b) parallel to third side
- (c) bisector
- (d) median

Q2. If the sides of two triangles are proportional, triangles are-

- (a) similar
- (b) congruent
- (c) parallel
- (d) perpendicular

Q3. The tangent at any point of a circle is-

- (a) parallel to radius
- (b) perpendicular to radius
- (c) equal to radius
- (d) twice the radius

Q4. From an external point the lengths of tangents drawn to a circle are-

- (a) unequal
- (b) equal
- (c) double
- (d) zero

Q5. $\sin 30^\circ$ equals-

- (a) $1/2$
- (b) $\sqrt{3}/2$
- (c) 1
- (d) $\sqrt{2}/2$

Q6. $\cos 60^\circ$ equals-

- (a) 1
- (b) $1/2$
- (c) $\sqrt{3}/2$
- (d) $\sqrt{2}/2$

Q7. If $\sin A = 1/2$ then A is-

- (a) 30°
- (b) 45°
- (c) 60°
- (d) 90°

Q8. The value of $\sin^2 A + \cos^2 A$ is-

- (a) 0
- (b) 1
- (c) 2
- (d) -1

Q9. Angle between horizontal line and line of sight when object is above is-

- (a) depression
- (b) elevation
- (c) vertical
- (d) reflex

Q10. A tower subtends angle of elevation 45° . If distance is 10 m, height is-

- (a) 10 m
- (b) 20 m
- (c) 5 m
- (d) 15 m

Q11. Area of circle radius 7 cm is-

- (a) 154 cm^2
- (b) 49 cm^2
- (c) 22 cm^2
- (d) 144 cm^2

Q12. Circumference of circle radius 7 cm-

- (a) 44 cm
- (b) 22 cm
- (c) 49 cm
- (d) 14 cm

Q13. Volume of cube side 5 cm-

- (a) 25 cm^3
- (b) 100 cm^3
- (c) 125 cm^3
- (d) 150 cm^3

Q14. Curved surface area of cylinder is-

- (a) $2\pi rh$
- (b) $\pi r^2 h$
- (c) $2\pi r^2$
- (d) πrh

Q15. Mean of 2,4,6,8 is-

- (a) 5 (b) 6
(c) 4 (d) 3

Q16. The middle observation in arranged data is-

- (a) mean (b) median
(c) mode (d) range

Q17. Probability of getting head in a fair coin toss is-

- (a) 1 (b) $1/2$
(c) $1/3$ (d) 0

Q18. Probability of getting 6 on a dice is-

- (a) $1/6$ (b) $1/3$
(c) $1/2$ (d) 1

Q19. If roots of equation $x^2 - 7x + k = 0$ are equal, k equals-

- (a) 12.25 (b) 49
(c) 24.5 (d) 12

Q20. Distance between (1,1) and (4,5) is-

- (a) 3 (b) 4
(c) 5 (d) $\sqrt{5}$

Q21. If $\tan \theta = 1$ then θ is-

- (a) 30° (b) 45°
(c) 60° (d) 90°

Q22. If common difference is zero, AP becomes-

- (a) constant series (b) GP
(c) HP (d) random

Q23. If radius doubles, area becomes-

- (a) double (b) triple
(c) four times (d) same

Q24. If two lines intersect, number of solutions is-

- (a) 0 (b) 1
(c) infinite (d) two

Q25. Probability value lies between-

- (a) -1 and 1 (b) 0 and 1
(c) 0 and 2 (d) 1 and 2

Q26. If $\sin \theta = \cos \theta$ then θ equals-

- (a) 30° (b) 45°
(c) 60° (d) 90°

Q27. Median divides data into-

- (a) two equal parts (b) three parts
(c) four parts (d) five parts

Q28. If radius of sphere is doubled, volume becomes-

- (a) 2 times (b) 4 times
(c) 8 times (d) 16 times

Q29. If α and β are roots, $\alpha + \beta$ equals-

- (a) $-b/a$ (b) b/a
(c) $-c/a$ (d) c/a

Q30. If two triangles have equal ratios of corresponding sides, they are-

- (a) congruent (b) similar
(c) right triangles (d) obtuse triangles

Q31. The HCF of 306 and 657 using the Fundamental Theorem of Arithmetic is-

- (a) 9 (b) 18
(c) 27 (d) 3

Q32. The decimal expansion of a rational number will terminate if the denominator in lowest form has prime factors-

- (a) only 2 (b) only 5
(c) only 2 and 5 (d) only 3 and 5

Q33. $\sqrt{3}$ is irrational because it cannot be written as-

- (a) p/q where $q \neq 0$
(b) p/q where p and q are integers
(c) p/q where p and q are prime numbers
(d) p/q where $q = 1$

Q34. The value of $\sqrt{50} + \sqrt{8} - \sqrt{18}$ is-

- (a) $4\sqrt{2}$ (b) $5\sqrt{2}$
(c) $6\sqrt{2}$ (d) $3\sqrt{2}$

Q35. If α and β are zeros of $x^2 - 5x + 6$, then $\alpha + \beta$ is-

- (a) 6 (b) -6
(c) 5 (d) -5

Q36. If the zeros of $ax^2 + bx + c$ are equal, then-

- (a) $b^2 - 4ac > 0$
(b) $b^2 - 4ac = 0$
(c) $b^2 - 4ac < 0$
(d) $b^2 + 4ac = 0$

Q37. If α and β are zeros of $x^2 - 7x + 10$, then $\alpha\beta$ is-

- (a) 10 (b) -10
(c) 7 (d) -7

Q38. The system $2x + 3y = 7$ and $4x + 6y = 14$ represents-

- (a) intersecting lines
- (b) parallel lines
- (c) coincident lines
- (d) perpendicular lines

Q39. The pair $2x - y = 5$ and $4x - 2y = 9$ has-

- (a) infinite solutions
- (b) no solution
- (c) one solution
- (d) two solutions

Q40. The solution of $x + y = 5$ and $x - y = 1$ is-

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

Q41. The roots of $x^2 - 9 = 0$ are-

- (a) ± 9
- (b) ± 3
- (c) 3 only
- (d) -3 only

Q42. If the discriminant of a quadratic equation is negative, the roots are-

- (a) real and equal
- (b) real and distinct
- (c) imaginary
- (d) rational

Q43. The quadratic equation whose roots are 2 and 3 is-

- (a) $x^2 - 5x + 6 = 0$
- (b) $x^2 + 5x + 6 = 0$
- (c) $x^2 - x - 6 = 0$
- (d) $x^2 + x - 6 = 0$

Q44. The 10th term of the AP 3, 7, 11... is-

- (a) 39
- (b) 40
- (c) 41
- (d) 43

Q45. The sum of first 10 natural numbers is-

- (a) 45 (b) 55
(c) 60 (d) 65

Q46. If $a = 2$ and $d = 3$, the 15th term is-

- (a) 42 (b) 44
(c) 46 (d) 48

Q47. The distance between (2,3) and (6,7) is-

- (a) 4 (b) $4\sqrt{2}$
(c) 8 (d) $\sqrt{8}$

Q48. The midpoint of (2,4) and (6,8) is-

- (a) (4,6) (b) (5,6)
(c) (4,7) (d) (3,6)

Q49. The point dividing the line joining (0,0) and (6,6) internally in ratio 1:2 is-

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

Q50. If two triangles are equiangular, they are-

- (a) congruent
(b) similar
(c) isosceles
(d) scalene

SECTION B: REASONING

(Total Questions: 35

Max Marks: 70)

Q51. Mirror image of 2:35 (clock) will be:

- (a) 9:25 (b) 9:35
(c) 8:25 (d) 8:35

Q52. Find next: 11, 13, 17, 19, 23, _____

- (a) 25 (b) 27
(c) 29 (d) 31

Q53. If TRAIN \rightarrow USBJO, then CLOUD \rightarrow ?

- (a) DMPVE (b) EMPVE
(c) SPBEN (d) DNOEF

Q54. Find the odd pair:

- (a) Pen-Write (b) Knife-Cut
(c) Book-Read (d) Plate-Drive

Q55. A is brother of B, B is sister of C, C is father of D. How is A related to D?

- (a) Uncle (b) Brother
(c) Grandfather (d) Cousin

Q56. Missing number: 5, 10, 20, 40, _____

- (a) 60 (b) 70
(c) 80 (d) 90

Q57. If $6 \times 7 = 56$, $8 \times 9 = 90$, then $5 \times 6 = ?$

- (a) 42 (b) 36
(c) 40 (d) 30

Q58. A moves east, then left, then left again. Final direction?

- (a) West (b) North
(c) South (d) East

Q59. Arrange: 3, 6, 18, 72, 360, _____

- (a) 1800 (b) 2160
(c) 2000 (d) 1500

Q60. If FLOWER = Reproduction, the Petal =?

- (a) Attracting rain
(b) Attracting ants
(c) Protecting seeds
(d) Transpiration

Q61. Odd one out:

- (a) Cow
(b) Goat
(c) Tiger
(d) Dog

Q62. If A = 1, B = 2 ... Z = 26, find value of FACE

- (a) 15
(b) 20
(c) 25
(d) 30

Q63. Find next: 2, 12, 36, 80, 150, _____

- (a) 252
(b) 240
(c) 260
(d) 270

Q64. A man walks 10 m south, then 10 m east, then 10 m north. Where is he?

- (a) 10 m east
(b) 10 m west
(c) 20 m east
(d) Origin

Q65. If RED = 27 and BLUE = 40, then GREEN =?

- (a) 49
(b) 50
(c) 51
(d) 52

Q66. All apples are fruits. Some fruits are sweet. Conclusion?

- (a) Some apples are sweet
(b) All apples are sweet
(c) Some fruits are apples
(d) None definite

Q67. Complete: AB, BC, CD, DE, _____

- (a) EF (b) FG
(c) DF (d) EE

Q68. Find the next one Missing in the series: 121, 144, 169, 196, _____

- (a) 210 (b) 225
(c) 256 (d) 230

Q69. If SUN = STAR, then EARTH = ?

- (a) Satellite (b) Comet
(c) Galaxy (d) Planet

Q70. A is father of B, B is father of C. How is A related to C?

- (a) Father (b) Grandfather
(c) Uncle (d) Brother

Q71. Find odd:

- (a) 8 (b) 27
(c) 64 (d) 125

Q72. If $4 + 5 = 41$ and $3 + 6 = 45$, then $2 + 7 = ?$

- (a) 48 (b) 51
(c) 53 (d) 55

Q73. Find next: 1, 1, 2, 3, 5, 8, _____

- (a) 11 (b) 12
(c) 13 (d) 15

Q74. "A" walks north, then right, then right again. Final direction?

- (a) South (b) East
(c) West (d) North

Q75. A man says, "The women is the daughter of my mother's only son."

How is the women related to man.?

- (a) Sister (b) Daughter
(c) Niece (d) Mother

Q76. Find the missing term: 7, 21, 66, 198, 595, _____

- (a) 1785 (b) 1788
(c) 1790 (d) 1800

Q77. If in a code, MANGO = 13114157, then GRAPE = ?

- (a) 79116105
(b) 7911605
(c) 79116106
(d) 7911505

Q78. A man walks 15 m north, then 10 m west, then 15 m south, then 5 m east. How far is he from the starting point?

- (a) 5 m (b) 10 m
(c) 15 m (d) 20 m

Q79. Find the odd one out:

- (a) 64 (b) 125
(c) 216 (d) 243

Q80. If $12 + 24 = 420$ and $15 + 16 = 240$, then $18 + 12 = ?$

- (a) 216 (b) 210
(c) 2160 (d) 200

Q81. Complete the series: AZ, BY, CX, DW, _____

- (a) EV (b) FU
(c) GV (d) EW

Q82. If in a family, P is mother of Q, Q is sister of R, R is father of S, then how is P related to S?

- (a) Grandmother (b) Aunt
(c) Mother (d) Sister

Q83. If CAT = 3120 and DOG = 4157, then BAT = ?

- (a) 2120 (b) 2210
(c) 3121 (d) 2110

Q84. Find missing: 3, 9, 27, 81, 243, _____

- (a) 729 (b) 721
(c) 730 (d) 700

Q85. Statements: All metals are solids. Some solids are liquids. Conclusions?

- (a) All liquids are metals
(b) Some metals are liquids
(c) Some solids are metal
(d) None

SECTION C: GENERAL SCIENCE

(Total Questions: 30

Max Marks: 60)

Q86. Human eye lens forms image on-

- (a) retina (b) cornea
(c) iris (d) optic nerve

Q87. Myopia corrected by-

- (a) convex lens (b) concave lens
(c) prism (d) mirror

Q88. Plants show movement towards light called-

- (a) phototropism (b) geotropism
(c) hydrotropism (d) chemotropism

Q89. Functional unit of nervous system-

- (a) neuron
- (b) axon
- (c) dendrite
- (d) brain

Q90. Asexual reproduction occurs in-

- (a) bacteria
- (b) humans
- (c) birds
- (d) mammals

Q91. Mendel studied inheritance in-

- (a) wheat
- (b) Pea plant
- (c) maize
- (d) rice

Q92. Sex determination in humans depends on-

- (a) X chromosome
- (b) Y chromosome
- (c) both
- (d) none

Q93. Ecosystem consists of-

- (a) living only
- (b) non-living only
- (c) both living and non-living
- (d) animals only

Q94. Ozone layer protects from-

- (a) UV rays
- (b) visible light
- (c) infrared
- (d) radio waves

Q95. Biodegradable waste example-

- (a) plastic
- (b) glass
- (c) vegetable waste
- (d) metal

Q96. Detergents differ from soaps because-

- (a) work in hard water
- (b) work in soft water
- (c) both
- (d) none

Q97. Solenoid produces-

- (a) electric field
- (b) magnetic field
- (c) gravitational field
- (d) sound

Q98. Combustion reaction requires-

- (a) oxygen
- (b) nitrogen
- (c) carbon
- (d) hydrogen

Q99. Power of lens measured in-

- (a) meter
- (b) diopter
- (c) watt
- (d) joule

Q100. Transport of water in plants occurs through-

- (a) xylem
- (b) phloem
- (c) cortex
- (d) epidermis

Q101. Chemical equation must be balanced to satisfy-

- (a) law of motion
- (b) law of conservation of mass
- (c) law of gravity
- (d) law of energy

Q102. Reaction producing heat is-

- (a) endothermic
- (b) exothermic
- (c) displacement
- (d) substitution

Q103. pH value of neutral solution is-

- (a) 5 (b) 7
(c) 9 (d) 14

Q104. Metal that reacts with oxygen forming rust-

- (a) Iron (b) Copper
(c) Aluminium (d) Gold

Q105. Corrosion of iron is called-

- (a) rusting (b) melting
(c) oxidation (d) reduction

Q106. Baking soda chemical formula-

- (a) NaHCO_3 (b) Na_2CO_3
(c) CaCO_3 (d) NaOH

Q107. Plaster of Paris prepared from-

- (a) gypsum (b) limestone
(c) marble (d) chalk

Q108. Ethanol belongs to group-

- (a) alcohol (b) aldehyde
(c) ketone (d) acid

Q109. Unit of electric current-

- (a) volt (b) ohm
(c) ampere (d) watt

Q110. Ohm's law states-

- (a) $V \propto I$ (b) $I \propto V$
(c) $V = IR$ (d) all

Q111. Device converting electrical energy into heat-

- (a) heater (b) motor
(c) generator (d) battery

Q112. Fleming's left hand rule gives direction of-

- (a) current (b) force
(c) field (d) resistance

Q113. Frequency of AC in India-

- (a) 60 Hz (b) 50 Hz
(c) 100 Hz (d) 25 Hz

Q114. Image formed by plane mirror is-

- (a) real (b) inverted
(c) virtual (d) enlarged

Q115. Refractive index relates-

- (a) reflection (b) refraction
(c) diffraction (d) interference

SECTION D: ENGLISH

(Total Questions: 25 Max Marks: 50)

Q116. Identify determiner: "She bought some books."

- (a) She (b) bought
(c) some (d) books

Q117. Correct spelling-

- (a) Definatly
(b) Definitly
(c) Definetly
(d) Definetely

Q118. Choose correct sentence-

- (a) He don't know
- (b) He doesn't know
- (c) He not know
- (d) He no know

Q119. Reported speech: He said, "I am tired."

- (a) He said he is tired
- (b) He said that he was tired
- (c) He says he tired
- (d) He said tired

Q120. Passive voice of "She writes a letter"

- (a) A Letter writes by her
- (b) A Letter is written by her
- (c) A Letter was written
- (d) A Letter writing

Q121. Synonym of "Rapid"

- (a) slow
- (b) quick
- (c) dull
- (d) calm

Q122. Antonym of "Victory"

- (a) defeat
- (b) win
- (c) success
- (d) triumph

Q123. Correct punctuation-

- (a) whats your name
- (b) What's your name?
- (c) Whats your name?
- (d) What's your name.

Q124. Choose correct article: He is _____ honest man.

- (a) a (b) an
(c) the (d) none

Q125. Identify adjective: "A beautiful garden"

- (a) beautiful (b) garden
(c) a (d) none

Q126. Plural of "Child"

- (a) childs
(b) children
(c) childes
(d) child

Q127. Choose correct preposition: She is fond _____ music

- (a) at (b) of
(c) for (d) with

Q128. Meaning of "Optimistic"

- (a) hopeful (b) sad
(c) angry (d) tired

Q129. Sentence correction: "He have a car."

- (a) He has a car
(b) He having car
(c) He have car
(d) He had a car

Q130. Identify noun in sentence: "Honesty is the best policy."

- (a) honesty (b) best
(c) policy (d) both a and c

Read the passage and answer the questions Accordingly

Education plays a vital role in shaping the future of individuals and society. It provides knowledge and skills that help people grow intellectually and socially. An educated person is more aware of their rights and duties, which makes them a responsible citizen. Education also empowers individuals to make informed decisions and contribute positively to the development of the nation. Without proper education, progress in any field becomes difficult, and society may face many challenges.

Q131. The passage mainly discusses-

- (a) politics
- (b) education
- (c) economy
- (d) sports

Q132. Education provides-

- (a) money
- (b) power only
- (c) knowledge and skills
- (d) jobs only

Q133. Responsible citizenship means-

- (a) obeying rules
- (b) voting only
- (c) awareness and responsibility
- (d) paying taxes only

Q134. The word “empowers” means-

- (a) weakens
- (b) strengthens
- (c) ignores
- (d) removes

Q135. Opposite of “future”

- (a) present
- (b) past
- (c) tomorrow
- (d) today

Q136. Choose correct tense: She ___ to school daily.

- (a) go (b) goes
(c) going (d) gone

Q137. Correct synonym of "Brave"

- (a) coward (b) timid
(c) courageous (d) weak

Q138. Antonym of "Ancient"

- (a) old (b) modern
(c) past (d) antique

Q139. Fill: I ___ finished my work just now.

- (a) has (b) have
(c) had (d) having

Q140. Choose correct modal: You ___ respect elders.

- (a) should (b) may
(c) might (d) could