# ADARSH
## Group of Schools Ch. Dadri
## Maths & Science Olympiad–2026

**NAME-** _____ **FATHER'S NAME-** _____

**ROLL NO.-** _____ **CLASS-** **8th**

**MOBILE NO.-** _____ **INVIGILATOR SIGN. -** _____

**TIME- 90 Min.** **MM- 70**

---

## SUBJECT- MATHEMATICS & REASONING

**Q1. Find $\sqrt{1 + 3 + 5 + 7 + \text{-----} + 685}$**

a) 9 b) 27

c) 49 d) 7

**Q2. How much pure alcohol be added to 600 ml of a 20% solution to make its strength 36%**

a) 100 ml b) 120 ml

c) 140 ml d) 150 ml

**Q3. The excise duty on a certain item has been reduced to ₹800 from ₹1024 find the percentage reduction in the excise duty.**

a) 28% b) 26%

c) $21\frac{7}{8}$ % d) $24\frac{3}{8}$ %

**Q4. If the side of a chess board is smaller than its perimeter by 42 cm then find the area of the chess board.**

a) 100 $cm^2$ b) 144 $cm^2$

c) 196 $cm^2$ d) 180 $cm^2$

**Q5. If P is 28% of Q and R is 56% of Q then P is what percent of R?**

a) 20% b) 25%

c) 50% d) 75%

**Q6. If $\frac{1}{P} - \frac{1}{q} - \frac{1}{r} = \frac{1}{18}$ and pq + qr = pr then find value of r.**

a) 0 b) 1

c) 18 d) -36

**Q7. $\frac{1}{1+a^{b-c}} + \frac{1}{1+a^{c-b}}$ is equal to**

a) 2 b) $a^{b+c}$

c) 1 d) a + b + c

**Q8. If $x = 2^{1/2} + 2^{-1/2}$ then $2x^2 + 3 =$**

a) 12 b) 7

c) 21 d) 15

**Q9. If the radius of a cylinder is increased from 7m to 10m and the surface area of it kept Same. If its height is 4m new height will be:**

a) 2.8m b) 3.1m

c) 3.6m d) 3.3m

**Q10. The Ratio of a two- digit number and sum of two- digit number of the same number is 5:1. If the Unit's digit is one more than the ten's digit then the number**

a) 45 b) 56

c) 34 d) None

**Q11. The median of the data when mean and mode are respectively 45 and 36 is**

a) 38 b) 42

c) 49 d) 39

**Q12. If $3\sqrt{3\sqrt{x-2}+1}$ = 2 then 2x-1 =**

a) 689 b) 869

c) 665 d) 886

**Q13. If $(2^{x+3} \times 3^{x-1})^{1/2} = \frac{216\times 18^{x}}{4^{x-1}\times 27^{x}}$ then the value of x is:**

a) $\frac{7}{2}$ b) $\frac{7}{3}$

b) c) $\frac{5}{3}$ d) None of these

**Q14. Solve for y: $\frac{y+b}{a-b} = \frac{y-b}{a+b}$**

a) a b) -b

c) -a d) 2b

**Q15. Present age of Rajni and Priya are in the ratio of 11:9 respectively. Three years ago, the ratio of their ages was 5:4 respectively. What is Priya's age after 2 years?**

a) 24 years b) 27 years

c) 40 years d) 29 years

**Q16. If $x^2 + \frac{1}{x^2}$ = 53 then find the value of x - $\frac{1}{x}$**

a) $\sqrt{51}$ b) $\sqrt{53}$

c) $\sqrt{61}$ d) $\sqrt{63}$

**Q17. If $x + \frac{1}{x}$ = 5 then find the value of $x^4 + \frac{1}{x^4}$**

a) 144 b) 400

c) 236 d) 527

**Q18. Find the area of the regular hexagon of side 16 cm.**

**(Use $\sqrt{3}$ = 1.732)**

a) 650.748 $cm^2$

b) 784 $cm^2$

c) 665.088 $cm^2$

d) 942 $cm^2$

**Q19. Find the surface area of a cube whose diagonal of the face is 60 cm long.**

a) 900 $cm^2$

b) 1800 $cm^2$

c) 1080 $cm^2$

d) 10800 $cm^2$

**Q20. Three cubes of sides 5dm, 3dm and 4dm are melted to form a new cube. Find the side of the new cube formed**

a) 600 cm

b) 0.6 cm

c) 0.06 cm

d) 60 cm

**Q21. Seven equal cubes each of side 8 cm are joined end to end in a row. Find the surface area of the resulting cuboid.**

a) 1480 $cm^2$

b) 1920 $cm^2$

c) 1820 $cm^2$

d) 1290 $cm^2$

**Q22. Factorise: $(7a - 4b)^2 + 9(7a - 4b) + 20$.**

a) (7a – 4b +5) (7a – 4b + 4)

b) (7a – 4b) (3a + 2b + 6)

c) (7a + 4b + 5) (7a + 4b + 4)

d) (7a + 4b) (3a – 2b – 6)

**Q23. Factorise: $1 - 2ab - a^2 - b^2$**

a) (1 – a – b) (1 + a + b)

b) (1 – a – b) (1 – a + b)

c) (1 + a + b) (1 – a + b)

d) (a + b – 1) (a + b + 1)

**Q24. If the area of an equilateral triangle is $24\sqrt{3}$ $m^2$, then its Perimeter is:**

a) 12 √6 m

b) 9√6 m

c) 8√3m

d) 4√3m

**Q25. Five more than four times a number is four less than five times the same number, find the number.**

a) 7

b) 8

c) 10

d) 9

**Q26. Pointing to a man in a photograph, a woman says, "He is the only son of the only daughter-in-law of my only son's father. How is the man related to the woman?**

a) Son

b) Father

c) Son-in-law

d) Grandson

**Q27. In a certain code language, 'TOGETHER' is written as 'QRDHQKBU'. Then how is 'RAROLE' written in that code?**

a) MDORIH

b) MDPQIH

c) MDORIB

d) MDSRMH

**Q28. Select the correct set of symbols which will fill in the blank spaces of the given expression.**

**25 _ 27 _ 75 _ 3 _ 5 = 550**

a) -, /, *, +

b) /, -, ,

c) , -, /,

d) /, -, /, *

**Q29. A person is standing on a staircase. He walks down 4 stairs, up 3 steps, down 6 steps, up 2 steps, up 9 steps and down 2 steps. Where is he standing in a relation to the step on which he started?**

a) 2 steps above

b) 1 step above

c) The same place

d) 1 step below

**Q30. How many such pairs of letters are there in the word "TWINKLING" each of which has as many letters between them in the word as in the English alphabets?**

a) 5 b) 4

c) 3 d) More than 5

**Q31. TQW : MJP :: ZHN : ?**

a) SAG b) GSA

c) YGA d) TEG

**Q32. If word MATH is coded as 26,2,40,16, then code for the word BOOK is**

a) 2,15,15,11 b) 10,20,20,44

c) 4,30,30,22 d) 1,12,12,14

**Q33. A man travels 2 km towards East and then turns right and travels 5 km. he then travels 2 km after turning left and then takes left again and travels 15 km. finally he turns right and travels 1 km to reach destination. How far is he now from the starting point?**

a) $5\sqrt{5}$ km b) $5\sqrt{2}$ km

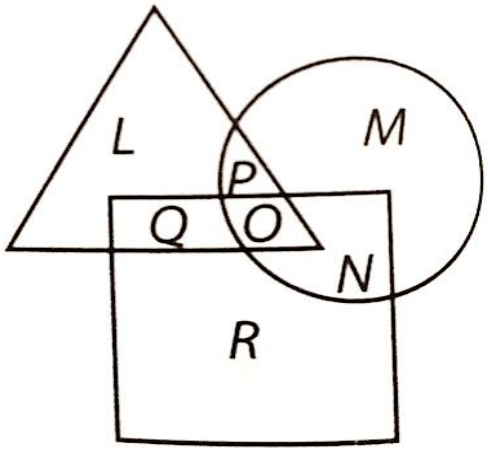
c) 5 km d) $2\sqrt{5}$ km

**Q34. If 'M * N' means 'M is the daughter of N', 'M+N' means 'M is the father of N', 'M/N' means 'M is the mother of N' and 'M-N' means 'M is the brother of N', then in the expression 'P/ Q + R – T * K' how many is P related to K?**

a) Daughter-in-law b) Mother-in-law

c) Aunt d) Mother

**Q35. In the given Venn diagram, if circle represents students who can play hockey, square represents students who can play badminton and triangle represents students who can play football. Which of the following options shows the students who can play only two sports out of given three sports?**




a) O
b) P+Q+N
c) L+M+R
d) P+Q+O

## SUBJECT- SCIENCE

**Q36. If a sperm containing X chromosome fuses with an ovum, it results in the formation of a**

a) Male child
b) Female child
c) Either a male or a female child
d) Cannot be determined

**Q37. The indiscriminate cutting of forests is called as**

a) afforestation
b) reforestation
c) deforestation
d) none of these

**Q38. Which part of candle flame is used by goldsmith to melt gold?**

a) Luminous Zone
b) Non Luminous zone
c) Inner most zone
d) Dark zone

**Q39. Complete the given analogy by selecting the correct option.**

**Smut disease of wheat: Fungus :: ..... : Bacteria**

a) Rust disease of wheat
b) Blight disease of potato
c) Wilt disease of potato
d) Tobacco mosaic disease

**Q40. Read the following statements and select the correct**

**(i) Regeneration is a form of sexual reproduction in which parent body breaks into distinct pieces to produce an offspring.**

**(ii) Rhizopus reproduces by spore formation.**

**(ii) Oviduct is the organ where zygote matures and grows till it is ready to be born.**

**(iv) Cloning is the process of producing genetically identical copy of an organism.**

a) (i) and (iv) only
b) (ii) and (iv) only
c) (i) and (iii) only
d) (ii) and (ii) only

**Q41. The organization that maintains Red Data Book is :**

a) IUCN
b) UNESCO
c) WWF
d) None of these

**Q42. The bacteria that fixes up nitrogen in leguminous plant are:**

a) Lactobacillus
b) Rhizobium
c) Azatobacter
d) Nitrosomonas

**Q43. Which one of the following condition is not essential to grow maize?**

a) High temperature
b) Humidity
c) Low temperature
d) Rainfall

**Q44. In human beings, the correct sequence of events during reproduction is**

a) gamete formation, fertilisation, zygote, embryo
b) embryo, zygote, fertilisation, gamete formation
c) fertilisation, gamete formation, embryo, zygote
d) gamete formation, fertilisation, embryo, zygote

**Q45. Which statement is incorrect about endangered species?**

a) Their number has decreased drastically.
b) They might become extinct in the near future.
c) They pose a danger to other animals.
d) Their natural habitat needs to be protected

**Q46.**


**A brick is kept in three different ways on a table as shown in figure. The pressure exerted by the brick on the table will be**

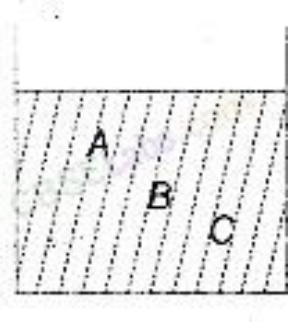
a) maximum in position A

b) maximum in position C

c) maximum in position B

d) equal in all cases

**Q47. Figure, shows a container filled with water. Which of the following statements is correct about pressure of water?**




a) Pressure at A > Pressure at B > Pressure at C

b) Pressure at A = Pressure at B = Pressure at C

c) Pressure at A < Pressure at B > Pressure at C

d) Pressure at A < Pressure at B < Pressure at C

**Q48. An object is vibrating at 50 Hz. What is its time period?**

a) 0.02 s

b) 2 s

c) 0.2 s

d) 20 s

**Q49. The earth's plate responsible for causing earthquakes is**

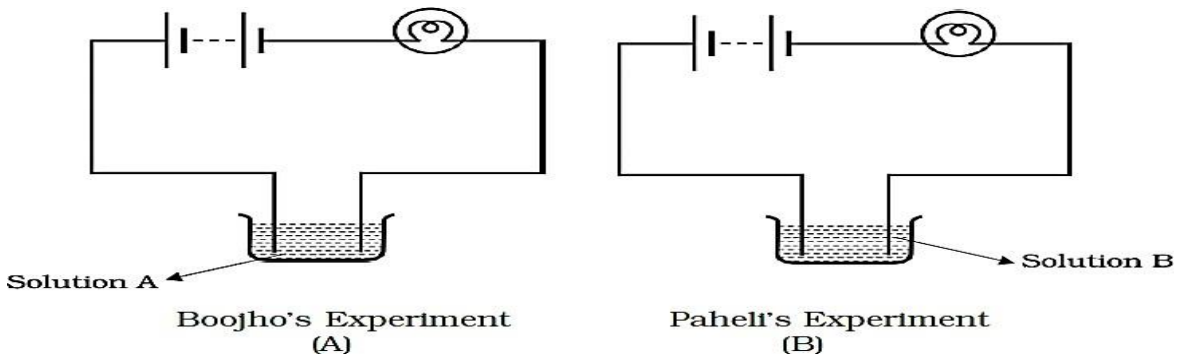
a) the crust of the earth

b) the mantle of the earth

c) the inner core of the earth

d) the outer core of the earth

**Q50. Boojho and Paheli performed experiments taking similar bulbs and cells but two different solutions, A and B, as shown in Fig.14.1.**




Boojho's Experiment
(A)

Paheli's Experiment
(B)

**They found that the bulb in setup A glows more brightly as compared to that of setup B. You would conclude that**

a) higher current is flowing through the circuit in setup A.

b) higher current is flowing through the circuit in setup B.

c) equal current is flowing through both the circuits.

d) the current flowing through the circuits in the two setups cannot be compared in this manner.

**Q51. If 2 A of current flows through a conductor, the charge that flows in one minute is ……C.**

a) 12 b) 120

c) 60 d) 16

**Q52. Assertion (A):** A 200 W bulb consumes 2 units of electrical energy when it is used for 10 hours.

**Reason (R):** 1 unit of electrical energy = 1000 kWh.

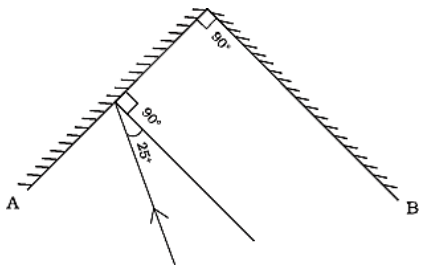
a) (A) and (R) are correct and (R) is correct explanation for (A).

b) (A) and (R) are correct but (R) is not the correct explanation for (A).

c) (A) is correct but (R) is not correct.

d) Both (A) and (R) are not correct.

**Q53. Two mirrors A and B are placed at right angles to each other as shown in fig.**



**A ray of light incident on mirror A at an angle of 25 degree falls on mirror B after reflection. The angle of reflection for the ray reflected from mirror B would be**

a) $25^0$ b) $50^0$

c) $65^0$ d) $115^0$

**Q54. 1 hertz is equal to**

a) 1 vibration per minute b) 10 vibrations per minute

c) 60 vibrations per minute d) 600 vibrations per minute

**Q55. In Fig, a boy is shown pushing the box from right to left. The force of friction will act on the box**

a) from right to left (←) b) from left to right (→)

c) vertically downwards (↓) d) vertically upwards (↑)

**Q56. Which of the following is not a green house gas?**

a) He b) $CO_2$

c) $O_3$ d) $CH_4$

**Q57. Which of the following is the characteristic of exhaustible natural resources?**

a) They are unlimited b) They are limited

c) They are not dependent on nature d) All of the above

**Q58. A mixture of antimony trisulphide, potassium chlorate and white phosphorous along with glue and starch was applied to the head of a suitable wood match. Which of the following chemical ignites when struck against a rough surface?**

a) Antimony trisulphide b) White Phosphorous

c) Glue d) Starch

**Q59. The Ideal months for harvesting kharif crop are**

a) June/ July
b) August/ September
c) September/ October
d) November/ December

**Q60. In presence of water, ignition temperature of paper**

a) decrease
b) increase
c) remains constant
d) can decrease or increase

**Q61. Which of the following is not an ideal fuel characteristic?**

a) Costly
b) Readily available
c) Easy to transport
d) High calorific value

**Q62. Which of the following is a chemical reaction that produces heat when a substance reacts with oxygen?**

a) Oxidation
b) Combustion
c) Reduction
d) Hydrolysis

**Q63. Which of the following is the best fire extinguisher for electrical equipment and inflammable substances?**

a) Water
b) $CO_2$
c) $O_2$
d) All of the above

**Q64. The method of loosing the soil is called**

a) Harvesting
b) Ploughing
c) Levelling
d) Threshing

**Q65. The central zone of candle flame is luminous due to**

a) Incomplete combustion of wax vapours
b) Complete combustion of wax vapours
c) No combustion of wax vapours
d) Formation of Carbon dioxide

**Q66. If fertilization does not occur the ovum is released out of**

a) Ovary
b) Uterus
c) Fallopian tube
d) Vagina

**Q67. The electrical energy consumed by a 30 W bulb in 5 minutes is**

a) 9000 KJ
b) 9 KJ
c) 9000 MJ
d) 9 MJ

**Q68. A list of mediums is given below.**

**i) Wood ii) Water iii) Air iv) vacuum**

**In which of these mediums can sound travels?**

a) i & ii only b) i, ii & iii only

c) iii & iv only d) ii, iii & iv only

**Q69. Levelling of soil helps to prevent _____?**

a) Soil erosion b) Sowing

c) Cultivation d) Drought

**Q70. Which of the following is not an inflammable substance?**

a) Alcohol b) Wood

c) Ethanol d) Liquified Petroleum gas