

DON BOSCO HIGH SCHOOL, PANJIM
DON BOSCO COMPETITIVE ADVANTAGE TEST (DB-CAT) 2024-25
27 FEBRUARY 2025
CLASS IX

A. QUESTION PAPER RELATED INSTRUCTIONS

Before you begin, check if all 80 questions have been printed on your question paper.
DB-CAT 24 - 2025 consists of a total of 80 questions as follows:

ENGLISH – Q Nos. 1-15

MATHEMATICS- Q Nos. 16-30

SCIENCE - Q Nos. 31-45

HISTORY – Q Nos. 46 -55

GEOGRAPHY – Q Nos. 56 – 65

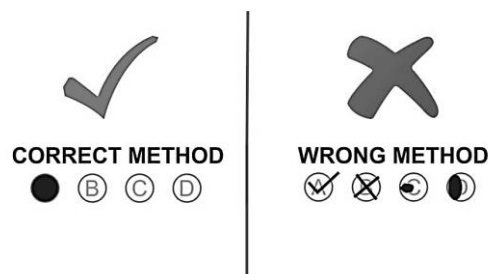
G.K AND CURRENT AFFAIRS Q Nos. 66 – 75

LOGIC AND REASONING – Q Nos. 76-80

1. Each question carries 1 mark.
2. Total duration of the test is 90 minutes
3. All questions are compulsory.
4. There is no negative marking for incorrect answers.
5. You may take away the question paper after the examination.

B. OMR SHEET RELATED INSTRUCTIONS:

1. Begin by writing your name and other required information in the space provided at the top of the OMR sheet.
2. Your signature must be entered in the box labelled as Candidate's signature.
3. Each Multiple Choice Question (MCQ) has four options - a) b) c) and d) of which only one is the correct answer.
4. Before marking your answers, carefully read each question and review all four options. Changing answers is not permitted.
5. Once you are sure of your answer, use a dark pen (**BLUE OR BLACK BALL POINT PEN**) to mark your answers on the provided OMR sheet. Answers marked with pencil will not be accepted
6. Fully darken the bubble corresponding to your chosen option, as shown in the example below.



7. Responses with more than one darkened bubble or those not darkened as per instructions will be considered invalid.
8. Avoid making any stray marks on the sheet.
9. No rough work should be done on the OMR sheet. All rough work must be done in the space provided on the question paper. Additional paper for rough work will be provided by the invigilator on request.
10. Do not use a marker or whitener on the OMR sheet.

- 2 | Page

14. Identify the sentence that contains personification.
- a) The stars danced playfully in the night sky. b) She is as graceful as a swan.
c) The lion is the king of the jungle. d) The cake was as sweet as honey.
15. What does the idiom "hit the nail on the head" mean?
- a) To make a mistake. b) To avoid a situation.
c) To express anger d) To say or do exactly the right thing.

MATHEMATICS

16. Which of the following is an irrational number?
- a) $0.\underline{14}$ b) $0.14\overline{16}$
c) 0.1416 d) $0.4014001400014\dots$
17. Decimal representation of a rational number cannot be _____
- a) terminating b) non-terminating
c) non-terminating repeating d) non-terminating non-repeating
18. $\sqrt{2}$ is a polynomial of degree _____
- a) 2 b) 0
c) 1 d) $\frac{1}{2}$
19. The value of $249^2 - 248^2$ is _____
- a) 1^2 b) 2
c) 487 d) 497
20. Ordinate of all the points on the x -axis is _____
- a) 0 b) 1
c) -1 d) any number
21. On plotting the points O (0, 0), A (3, 0), B (3, 4), C (0, 4) and joining OA, AB, BC and CO, which of the following figure is obtained?
- a) Square b) Rectangle
c) Trapezium d) Rhombus
22. If two interior angles on the same side of a transversal intersecting two parallel lines are in the ratio 2 : 3, then the greater of the two angles is _____
- a) 54° b) 108°
c) 120° d) 136°
23. The angles of a triangle are in the ratio 5: 3: 7. The triangle is _____
- a) an acute angled triangle b) an obtuse angled triangle
c) a right triangle d) an isosceles triangle
24. If $\triangle ABC \cong \triangle PQR$ and $\triangle ABC$ is not congruent to $\triangle RPQ$, then which of the following is not true?
- a) $BC = PQ$ b) $AC = PR$
c) $QR = BC$ d) $AB = PQ$
25. The area of the figure formed by joining the mid-points of the adjacent sides of a rhombus with diagonals 12 cm and 16 cm is _____
- a) 48 cm^2 b) 64 cm^2
c) 96 cm^2 d) 192 cm^2
26. The diagonals AC and BD of a parallelogram ABCD intersect each other at the point O. If $\angle DAC = 32^\circ$ and $\angle AOB = 70^\circ$, then $\angle DBC$ is equal to _____
- a) 24° b) 86°
c) 38° d) 32°
27. If the perimeter of an equilateral triangle is 60 m, then its area is _____
- a) $10\sqrt{3} \text{ m}^2$ b) $15\sqrt{3} \text{ m}^2$
c) $20\sqrt{3} \text{ m}^2$ d) $100\sqrt{3} \text{ m}^2$

28. If the sides of a triangle are 56 cm, 60 cm and 52 cm long ,then the area of the triangle is_____
- a) 1322 cm²
- b) 1311 cm²
- c) 1344 cm²
- d) 1392 cm²
29. The mean of five numbers is 30. If one number is excluded, their mean becomes 28. The excluded number is _____
- a) 28
- b) 30
- c) 35
- d) 38
30. The value of $(256)^{25} \times (256)^{\frac{-49}{2}}$ is_____
- a) 4
- b) 16
- c) 64
- d) 256.25

SCIENCE

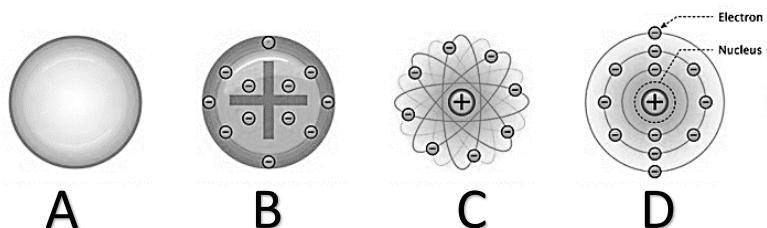
31. The atomic numbers of some elements are as follows: -
Sodium=11; magnesium=12; chlorine=17; argon=18
Which two elements have the same valency?
a) sodium and magnesium
b) chlorine and argon
c) magnesium and chlorine
d) sodium and chlorine
32. Which of the following is a mismatch?
a) When we switch on a mixer grinder – electrical energy to mechanical energy
b) During photosynthesis – light energy to chemical energy
c) When you stretch a rubber band and then release it – kinetic energy to potential energy
d) When you switch on the iron – electrical energy to heat energy
33. If the mass of an object is 12kg, what is the weight of the object on the surface of the moon? ($g = 10 \text{ m/s}^2$)
a) 20N
b) 1.2 N
c) 120N
d) 1200N
34. A student observed a permanent slide of a plant tissue and reported that the most abundant cells forming the bulk of the tissue were oval, thin cell walled with large intercellular spaces. These are the cells of the _____ tissue
a) Parenchyma
b) Chlorenchyma
c) Sclerenchyma
d) Epidermis
35. A student carefully prepared a colloidal solution of human blood and studied its properties. Which of the following properties would not be observed in a colloidal solution of human blood?
a) Can scatter a beam of light
b) Particle size between 1nm to 1000nm
c) Homogeneous
d) Quite stable
36. If a horse begins pulling a cart with a force of 100 N and causes it to accelerate by 20 m/s^2 , what is the mass of the cart?
a) 20kg
b) 150kg
c) 5 kg
d) 200kg
37. The Molar Mass of Calcium Carbonate is _____
a) 350 g
b) 45u
c) 157 u
d) 100 g
38. Which of the following practices naturally improves soil fertility?
a) Using NPK fertilizers
b) Crop rotation with leguminous plants.
c) Growing and then mulching Guar
d) Both b and c

39. Identify the type of muscular tissue shown in the diagram.



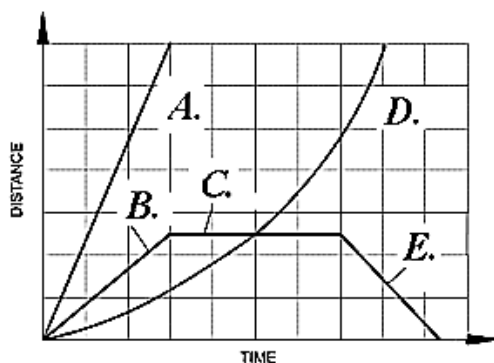
- a) Skeletal
- b) Cardiac
- c) Smooth
- d) Gastric

40. Which of the following represents Thomson's Plum Pudding model of the atom?



- a) A
- b) B
- c) C
- d) D

41. Which section of the graph shows that the object stopped for some time before it continued its journey?



- a) A
- b) B
- c) C
- d) D

42. If a ball is dropped from a height of 10 m then _____

- a) the potential energy decreases and the kinetic energy increases during the fall.
- b) its potential energy increases and kinetic energy decreases during the fall.
- c) its potential energy is equal to the kinetic energy throughout the fall.
- d) the potential energy is zero and kinetic energy is maximum while it is falling.

43. A person accidentally cuts a small piece of skin. Over time, the wound heals. The type of cell division responsible for this process is _____

- a) Mitosis in somatic cells
- b) Meiosis in somatic cells
- c) Meiosis in germ (reproductive) cells
- d) Mitosis in germ (reproductive) cells

44. Select the incorrect correlation.

- a) oil and water - separating funnel
- b) plasma from blood-centrifugation
- c) camphor and salt-distillation
- d) mud from muddy water-filtration

45. A fan of 1200 W is used for 6 hours per day. The weekly energy consumption of the fan is ____.

- a) 50.4kWh
- b) 7.2kWh
- c) 20.1 kWh
- d) 750 kWh

HISTORY

46. A tax levied by the church on the peasants in France during the 18th century was called the _____

- a) Taille
- b) Tithe
- c) Feudal
- d) Livre

- Class 10
47. The national anthem of France is "_____".
a) Parisienne b) Carmagnole
c) Marseillaise d) Chant du Départ
48. During the 1905 Revolution, the Tsar allowed the creation of an elected consultative parliament known as the _____.
a) Senate b) Mensheviks
c) Cossack d) Duma
49. Which one of the following was not a result of the Great Economic Depression of 1929?
a) Unemployment b) Economic prosperity
c) Banks collapsed d) Businesses shut down
50. To encourage women to produce more children, Hitler would award them with _____.
a) Medals b) Honorary Badge
c) Patriot's Award d) Honour Crosses
51. In 1510, Goa was conquered from Bijapur by _____.
a) Vasco da Gama b) Afonso de Albuquerque
c) Bartholomeo Dias d) Cunha e Menezes
52. The Chief Election Commissioner of India is appointed by the _____.
a) Prime Minister b) Cabinet Ministers
c) President d) Chief Justice
53. Which of the following is not a good argument in favour of democracy?
a) People feel free and equal in a democracy b) Democracies resolve conflict in a better way than others.
c) Democratic government is more accountable to the people d) Democracies are more prosperous than others
54. An introductory statement in a constitution that explains the reasons and guiding values of the document is called the _____.
a) Clause b) Amendment
c) Preamble d) Draft
55. Our country is divided into different areas for the purpose of elections, known as _____.
a) districts b) zones
c) wards d) constituencies

GEOGRAPHY

56. Uttarakhand, Uttar Pradesh, Bihar, West Bengal and Sikkim have common frontiers with_____.
- a) Nepal
b) Bhutan
c) China
d) Myanmar
57. Which mountain range forms the northern boundary of India?
- a) Aravalli Range
b) Himalayas
c) Western Ghats
d) Eastern Ghats
58. What is the area drained by a single river system called?
- a) Drainage
b) Water divide
c) Drainage Basin
d) None of these
59. Which of the following is a perennial river?
- a) Kaveri
b) Tapi
c) Godavari
d) Indus
60. The wind blowing in the northern plains in summer is known as_____.
- a) Loo
b) Trade winds
c) Kaal Baisakhi
d) None of the above

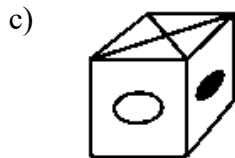
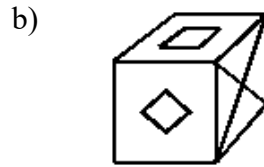
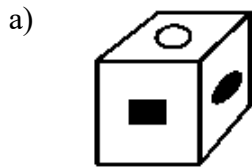
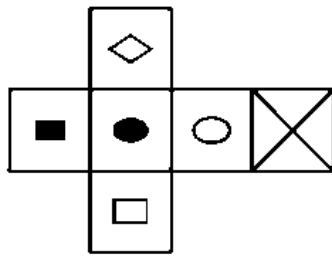
61. Which is the coldest place in India?
 - a) Shillong
 - b) Drass
 - c) Srinagar
 - d) None of these
62. Ebony, mahogany and rosewood trees grow in which type of forests?
 - a) Coniferous forest
 - b) Tropical thorn forest
 - c) Tropical rainforest
 - d) None of these
63. The character and extent of vegetation are mainly determined by which climatic factor?
 - a) Temperature
 - b) Precipitation
 - c) Humidity
 - d) All of the above
64. What is the main cause of high population growth in India?
 - a) Decline of death rate
 - b) Decline of birth rate
 - c) Rise in death rate
 - d) None of these
65. Which state has the lowest population in India?
 - a) Uttar Pradesh
 - b) Sikkim
 - c) Himachal Pradesh
 - d) All of these

G.K/ CURRENT AFFAIRS

66. Who among the following is known as the 'Architect of the Indian Constitution'?
 - a) Jawaharlal Nehru
 - b) Sardar Vallabhbhai Patel
 - c) B.R. Ambedkar
 - d) Subhas Chandra Bose
67. In which year was the Goods and Services Tax (GST) introduced in India?
 - a) 2015
 - b) 2017
 - c) 2019
 - d) 2020
68. Which is the longest National Highway in India?
 - a) NH-44
 - b) NH-2
 - c) NH-7
 - d) NH-48
69. What was the theme of World Environment Day 2024?
 - a) Nature for Climate
 - b) Solutions to Plastic Pollution. #BanSingleUsePlastics
 - c) Our land. Our future. We are #GenerationRestoration.
 - d) Only One Earth
70. In which year was the Environment Protection Act enacted?
 - a) 1986
 - b) 1989
 - c) 1884
 - d) 1990
71. Which international organization launched the 'Decade of Action for Road Safety' in 2021?
 - a) World Bank and United Nations (UN)
 - b) World Health Organization (WHO) and United Nations(UN)
 - c) International Monetary Fund (IMF)
 - d) World Bank
72. Which country hosted the 2024 Summer Olympics?
 - a) Japan
 - b) France
 - c) United States
 - d) Brazil
73. Which one of the following states has the longest coastline?
 - a) Gujarat
 - b) Maharashtra
 - c) Tamil Nadu
 - d) Andhra Pradesh
74. Who won the 2024 Nobel Peace Prize?
 - a) Malala Yousafzai
 - b) Nihon Hidankyo
 - c) Greta Thunberg
 - d) International Committee of the Red Cross
75. Which of the following is the largest producer of milk in India?
 - a) Punjab
 - b) Uttar Pradesh
 - c) Gujarat
 - d) Maharashtra

LOGIC AND REASONING

76. Which cube can be made from this shape?



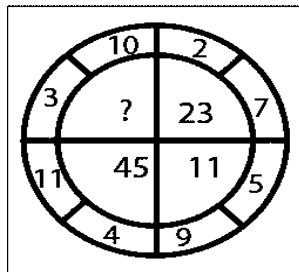
77. A is the son of C; C and Q are sisters; Z is the mother of Q and P is the son of Z. Which of the following statements is true?

- a) P and A are cousins b) P is maternal uncle of A
c) Q is the maternal grandfather of A d) C and P are sisters

78. If 5 persons weave 180 shawls in 12 days, how many shawls will 6 persons weave in 15 days?

- a) 260
c) 270
- b) 370
d) 360

79. Which number replaces the question mark?



- a) 91 b) 21
c) 46 d) 34

80. Observe the correlation between the first pair of figures and choose the figure which completes the second pair.

