Grade 10 **Quantity : 700**

SARVHITKARI PARKASHAN SOCIETY

SELECTION TEST
FOR
PUNJAB SUPER 100

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INSTRUCTIONS :

1. This test is for students who are presently in grade 10.
2. This test has 3 sections. First section consists of 30 questions from English and Reasoning. Second section consists of 30 questions from Mathematics and last section consists of 30 questions from Science.
3. Each right answer has 2 marks.
4. Each wrong answer will lead to deduct 1 mark from total marks obtained.
5. Mark your responses with blue ball pen in the OMR sheet provided along with this question paper.
6. Attempt all questions accordingly.

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ENGLISH AND REASONING Q. 1-30

1. Choose the best way to combine the two sentences. John lived on a farm. He had a horse of this own that he loved to ride

a) John he had a horse of his own on the farm where he lived.

b) John lived on a farm, and he had a horse of his own that he loved to ride.

c) John loved to ride his horse on the farm.

d) John loved to ride his horse he loved, and they lived on a farm.

2. The suffix -ous means:

a) Person b) Full of c) The act of d) None of the above

3. Which sentence uses capitalization correctly ?

a) Pa played and sang songs like "My old kentucky home."

b) Pa played and sang songs like "My Old Kentucky Home."

c) Pa played and sang songs like "My Old Kentucky home."

d) None of the above

4. Select the correct personal pronoun. I will happily call_____ tomorrow morning.

a) he b) them c) her d) him

5. When something has been desegregated, it is no longer kept apart.

a) Yes b) No

c) Wrong statement d) None of the above

6. What type of pronoun is the capitalized word ? SHE was the only one brave enough.

a) Verb pronoun b) Object pronoun

c) Adjective d) Subject pronoun

7. When you_____a square, you end up with two rectangles.

a) bisect b) duplicate c) monopolize d) erase

8. There ____ sixteen math problems on page twenty-five.

a) is b) he c) are d) am

9. Improper :

a) to reduce the value of something b) wisdom

c) not according to standards d) None of the above

10. He is very handsome. Which word is the adverb ?

a) He b) very c) handsome d) None of the above

11. What is the tense of the verb ? The club will sell cookbooks.

a) Present b) Past c) Future perfect d) Future

12. Select the correct tense. The answer will appear in the years to come.

a) Simple present b) Simple past

c) Simple future d) Complex future

13. Select the correct tense. In 1917, revolutionaries overthrew the czar.

a) Simple present b) Simple past

c) Simple future d) Medium past

14. Select the correct pronoun to complete the sentence. There was no dinner left for John and___.

a) I b) we c) me d) them

15. What kind of pronoun is used in the sentence? He had to shoot her to save his life.

a) Reflexive pronoun b) indefinite pronoun

c) Object pronoun d) Adjective pronoun

16. Which of the following is not a reflexive pronoun ?

a) herself b) himself c) Iself d) themselves

17. Read the following sentence. Which word is a demonstrative adjective ? I have that poster hanging in my room.

a) have b) that c) in d) my

18. Which of the following option shows ownership of woman

a) woman's b) womans c) women d) woman

19. Complete the series; 1/3, 1/8, 1/9, 1/24, ___

a) 1/26 b) 1/25 c) 1/28 d) 1/27

20. Choose the word that best completes the sentence. Did you know that Reggie_____ten laps in the pool yesterday ?

a) swim b) swam c) swum d) swimming

21. She noisily slurped her soup. Which word is the adverb ?

a) noisily b) slurped c) soup d) None

22. Complete the sentence with a pronoun. Sarah and Grace gave_____some books for the classroom library.

a) I b) she c) he d) me

23. Identify what type of sentence the following sentence is. How cheerful it sounds !

a) Declarative b) Interrogative c) Imperative d) Exclamatory

24. Homo :

a) Hot b) Same c) Similar d) Parallels

25. Choose the form of the verb that agrees with the subject. Everyone in the exercise classes _____ lost weight.

a) have b) am c) are d) has

26. The_____is the action in the sentence.

a) object b) punctuation c) predicate d) subject

27. What type of pronoun is the upper-case pronoun ? Thomas and Dylan went to MY favourite restaurant, Sonny's BBQ.

a) Subjective b) Possessive c) Intensive d) Nominative

28. The boys and girls on the team listened closely. Which word is the adverb ?

a) boys b) listened c) team d) closely

29. What Is the word in capital letters ? Bats often live in a CAVE.

a) Adjective b) Noun c) Adverb d) Pronoun

30. Where should you insert a comma (or commas) in the following sentence ? My doctor who I've been seeing since I was born is going to retire.

a) After "My doctor”

b) Before "since I was born”

c) Around "who I've been seeing since I was born"

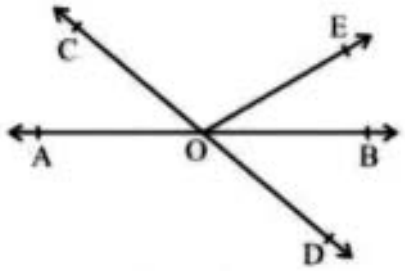
d) Before "is going to retire”

MATHEMATICS Q. 31-60

31. If speed of a car at time instant 't' is given by $v(t) = t^2 + t - 12$. Find the time instant when the car stops.

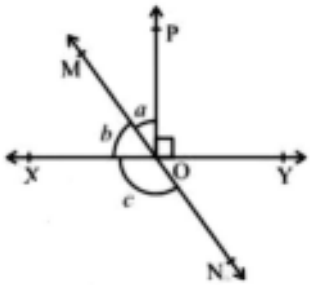
a) 3 s b) 4 s c) Both a and b d) None of the above

32. Lines AB and CD intersect at O. If ∠AOC + ∠BOE = 70° and ∠BOD = 40°, find ∠BOE and reflex ∠COE.



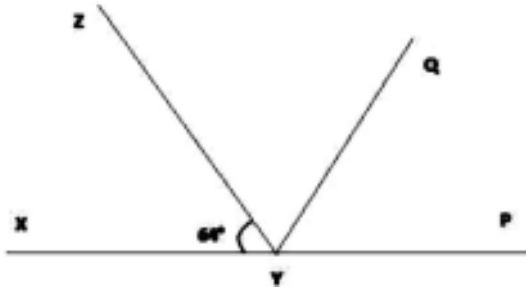
a) 275° b) 250° c) 265° d) 270°

33. Lines XY and MN intersect at O. If ∠POY = 90° and a : b = 2 : 3, find c.



a) 120° b) 145° c) 135° d) 126°

34. It is given that ∠XYZ = 64° and XY is produced to point P. If ray YQ bisects ∠ZYP, find reflex ∠QYP.



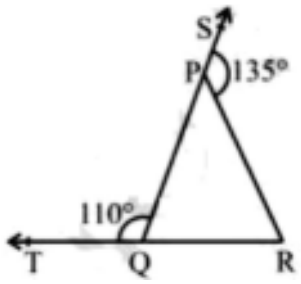
a) ∠QYP = 302 b) ∠QYP = 300 c) ∠QYP = 305 d) ∠QYP = 306

35. Solve for x and y ; $\sqrt{x} + y = 11,\ x + \sqrt{y} = 7$

a) x = 4, y = 9 b) x = 1, y = 100

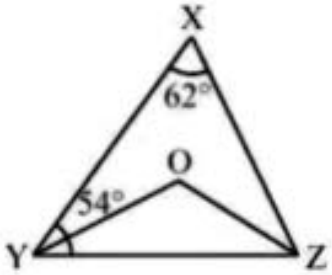
c) x = 3, y = 64 d) None of the above

36. Sides QP and RQ of ∠PQR are produced to points S and T respectively. If ∠SPR = 135° and ∠PQT = 110°, find ∠PRQ.



a) ∠PRQ = 65° b) ∠PRQ = 60° c) ∠PRQ = 55° d) ∠PRQ = 70°

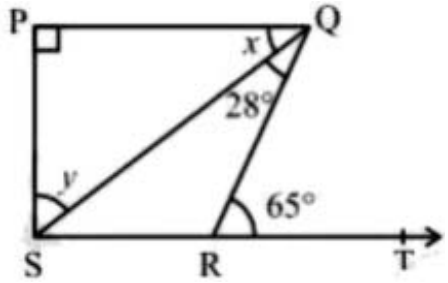
37. ∠X = 62°, ∠XYZ = 54°. If YO and ZO are the bisectors of ∠XYZ and ∠XZY respectively of Δ XYZ, find ∠YOZ.



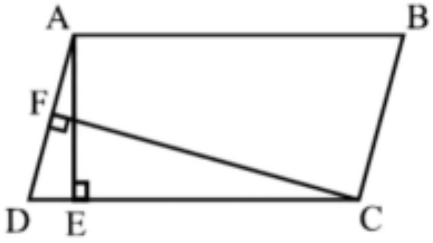
a) ∠O = 111° b) ∠O = 120° c) ∠O = 101° d) ∠O = 121°

38. If PQ ⊥ PS, PQ ‖ SR, ∠SQR = 28° and ∠QRT = 65°, then find the value of y.

a) y = 52° b) y = 54° c) y = 53° d) y = 55°



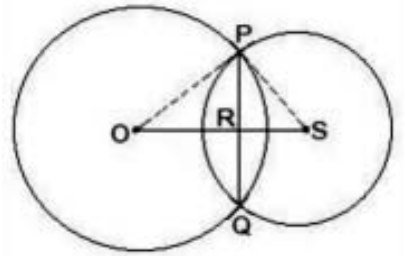
39. ABCD is a parallelogram, AE ⊥ DC and CF ? AD. If AB = 16 cm, AE = 8 cm and CF = 10 cm, find AD.



a) AD = 14.8 cm b) AD = 12.8 cm

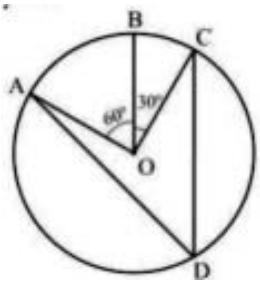
c) AD = 12.7 cm d) AD = 11.8 cm

40. Two circles of radii 5 cm and 3 cm intersect at two points and the distance between their centres is 4 cm. Find the length of the common chord.



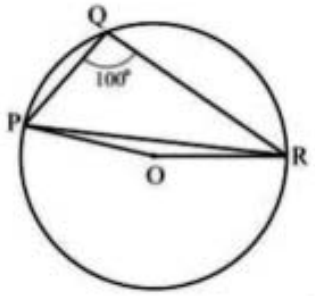
a) PQ = 6 cm b) PQ = 8 cm c) PQ = 12 cm d) PQ = 10 cm

41. A, B and C are three points on a circle with centre O such that ∠BOC = 30° and ∠AOB = 60°. If D is a point on the circle other than the arc ABC, find ∠ADC.



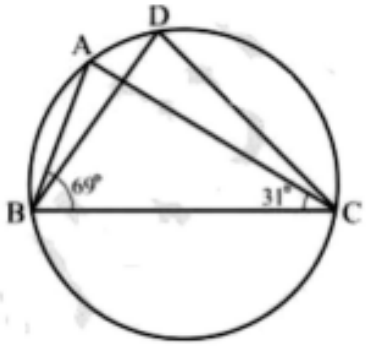
a) 85° b) 55° c) 45° d) 75°

42. ∠PQR = 100°, where P, Q and R are points on a circle with centre O. Find ∠OPR.



a) 30° b) 20° c) 15° d) 10°

43. ∠ABC = 69°, ∠ACB = 31°, find ∠BDC.



a) 80° b) 70° c) 65° d) 56°

44. There is a slide in a park. One of its side walls has been painted in some colour with a message "KEEP THE PARK GREEN AND CLEAN" . If the sides of the wall are 15 m, 11 m and 6 m, find the area painted in colour.

a) $20\sqrt{2}$ m^2 b) $21\sqrt{2}$ m^2 c) $20\sqrt{3}$ m^2 d) $22\sqrt{2}$ m^2

45. An isosceles triangle has perimeter 30 cm and each of the equal sides is 12 cm. Find the area of the triangle.

a) $9\sqrt{45}$ cm^2 b) $9\sqrt{17}$ cm^2 c) $9\sqrt{15}$ cm^2 d) $9\sqrt{19}$ cm^2

46. Find the area of a quadrilateral ABCD in which AB = 3 cm, BC = 4 cm, CD = 4 cm, DA = 5 cm and AC = 5 cm.

a) 35.17 cm^2 b) 15.17 cm^2 c) 10.17 cm^2 d) 16.17 cm^2

47. An umbrella is made by stitching 10 triangular pieces of cloth of two different colours , each piece measuring 20 cm, 50 cm and 50 cm. How much cloth of each colour is required for the umbrella ?

a) $5000\sqrt{6}$ cm^2 b) $2000\sqrt{6}$ cm^2 c) $3000\sqrt{6}$ cm^2 d) $1000\sqrt{6}$ cm^2

48. The floor of a rectangular hall has a perimeter 250 m. If the cost of painting the four walls at the rate of ₹ 10 per m^2 is ₹ 15000, find the height of the hall.

a) 6 m b) 7 m c) 8 m d) 6.5 m

49. Shabina wanted to make a temporary shelter for her car, by making a box – like structure with tarpaulin that covers all the four sides and the top of the car (with the front face as a flap which can be rolled up). Assuming that the stitching margins are very small, and therefore negligible, how much tarpaulin would be required to make the shelter of height 2.5 m, with base dimensions 4 m × 3 m ?

a) 27 b) 57 c) 47 d) 77

50. A metal pipe is 77 cm long. The inner diameter of a cross section is 4 cm, the outer diameter being 4.4 cm. Find its inner curved surface area

a) 978 b) 968 c) 977 d) 936

51. In a hot water heating system, there is cylindrical pipe of length 28 m and diameter 5 cm. Find the total radiating surface in the system. (Assume $\pi = 22/7$)

a) 4.4 m^2 b) 4.5 m^2 c) 4.6 m^2 d) 4.8 m^2

52. The sides of a triangle are 2006 cm, 6002 cm and m cm, where m is a positive integer. Find the number of such possible triangles.

a) 1 b) 2006 c) 3996 d) 4011

53. If $8^{2y} = 25$, What is 2^{-y} ?

a) 5^{-1} b) 5^{-3} c) $5^{-1/3}$ d) $25^{-1/3}$

54. If $x = \dfrac{1}{2-\sqrt{3}}$ find the value of $x^3 - 2x^2 - 7x + 5$

a) 1 b) 2 c) 3 d) 4

55. If $x = 1 - \sqrt{2}$ find the value of $\left(x - \dfrac{1}{x}\right)^3$

a) 6 b) 8 c) 10 d) 12

56. If $x + \sqrt{15} = 4$, then $x + \dfrac{1}{x} =$

a) 2 b) 4 c) 6 d) 8

57. If $x = \sqrt[3]{2+\sqrt{3}}$, then $x^3 + \dfrac{1}{x^3} =$

a) 2 b) 4 c) 8 d) 9

58. If P(1)(x) and P(2)(x) both leaves the same remainder when divided by x – 3, what is the value of a ? $P(1)(x) = ax^3 + 4x^2 + 3x - 4$, $P(2)(x) = x^3 - 4x + a$

a) 1 b) –1 c) 2 d) –2

59. Factorize : $9z^3 - 27z^2 - 100z + 300$

a) (3z + 10) (3z – 10) (z – 3) b) (3z + 5) (3z – 5) (z – 3)

c) (3z + 5) (3z – 10) (z + 2) d) (3z + 10) (3z – 10) (z + 2)

60. If x + a is a factor of the given polynomial, what is the value of a ?
$x^4 - a^2x^2 + 3x - 6a$.

a) 3 b) –1 c) 1 d) 0

SCIENCE Q. 61-90

61. A bob of a pendulum having mass of 5 kg is lifted to a height of 20 cm from the level of its mean position and it is allowed to swing. Find the speed in m/s of the bob as it passes from the mean position.

a) 0 b) 1 c) 2 d) 3

62. Suppose that there are 2 planets A and B revolving around sun such that their distances from the center of sun are 4×10^8 km and 16×10^8 km, respectively. If planet A completes one revolution in 10 days, then find period of revolution for planet B in days.

a) 80 b) 40 c) 20 d) 10

63. The term "water-pollution" can be defined in several ways. Which of the following statements does not give the correct definition ?

a) The addition of undesirable substances to water bodies
b) The removal of desirable substances from water bodies
c) A change in pressure of the water bodies
d) A change in temperature of the water bodies

64. Which of the following is a recently originated problem of environment ?

a) Ozone layer depletion b) Greenhouse effect
c) Global warming d) All of the above

65. Biotic component of the biosphere is not constituted by

a) producers b) consumers c) decomposer d) air

66. Cattle husbandry is done for the following purposes :

a) Milk production b) Agricultural work
c) Meat production d) All of the above

67. Which one of the following fishes is a surface feeder ?

a) Rohus b) Mrigals c) Common carps d) Catlas

68. Which of the following contain macro-nutrients only ?

a) Calcium, sulphur and zinc b) Nitrogen, phosphorus and potassium
c) Calcium, magnesium and copper d) Nitrogen, iron and chlorine

69. What is atomic number of Rutherfordium ?

a) 100 b) 101 c) 104 d) 105

70. If pH of a solution is 12, then find the concentration of hydroxyl ion.

a) 10^{-2} b) 10^{-4} c) 10^{-6} d) 10^{-7}

71. The boiling points of diethyl ether, acetone and n-butyl alcohol are 35° C 56° C and 118° C respectively. Which one of the following correctly represents their boiling points in Kelvin scale ?

a) 306 K, 329 K and 391 K
b) 308 K, 329 K and 392 K
c) 308 K, 329 K and 391 K
d) 329 K, 392 K and 308 K

72. What happens if a non-volatile impurity is added to water ?

a) Boils at 100° C
b) Boils below 100° C
c) Boils above 100° C
d) None of the above

73. When water at 0°C freezes to form ice at the same temperature of 0°C, then which of the following statements is incorrect ?

a) Potential energy decreases
b) Kinetic energy increase
c) Absorbs heat at constant temperature
d) Absorbs exactly 3.34×105J/kg of heat

74. In which group of animals, coelom is filled with blood ?

a) Arthropoda b) Annelida c) Nematoda d) Echinodermata

75. Pteridophyta do not have

a) root b) stem c) flowers d) leaves

76. Organisms without nucleus and cell organelles belong to

a) fungi
b) archae bacteria
c) cyano bacteria
d) Both (b) and (c)

77. The locomotory organs of Echinodermata are

a) tube feet b) muscular feet c) jointed legs d) parapodia

78. Skeleton is made entirely of cartilage in

a) Sharks b) Tuna c) Rohu d) None of these

79. A particle of mass 2.2 kg is moving on a circular path with constant speed of 2 m/s. If the radius of the circle is 0.7 m then find the average force acting on the particle in half revolution. Choose the correct option. If required take value of acceleration due to gravity as 10 N/kg.

a) 0 b) 4 N c) 8 N d) 12 N

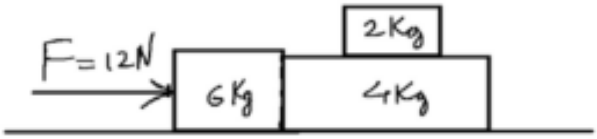
80. A car is moving with an initial speed of 72 km/h along the straight horizontal road. If the coefficient of friction between tyre and road is 0.2 then find the minimum distance travelled by the car after which it will stop on applying brakes. Choose the correct option. If required take value of acceleration due to gravity as 10 N/kg

a) 50 m b) 100 m c) 150 m d) 200 m

81. A box of mass 50 kg is kept on a table having coefficient of friction 0.2. If the block is pulled horizontally with a force of 25 N then the acceleration of the block will be ? Choose the correct option. If required take value of acceleration due to gravity as 10 N/kg.

a) 0 $m.s^{-2}$ b) 0.2 $m.s^{-2}$ c) 0.6 $m.s^{-2}$ d) 1.2 $m.s^{-2}$

82. Find the acceleration of block of mass 2 kg as shown in the figure considering all the surfaces to be smooth. Choose the correct option. If required take value of acceleration due to gravity as 10N/kg



a) 0 b) 1 N c) 2 N d) None of the above

83. A gaseous hydrocarbon gives upon combustion 0.72 g of water and 3.08 g of CO2. The empirical formula of the hydrocarbon is

a) C_2H_4 b) C_3H_4 c) C_6H_5 d) C_7H_8

84. Which of following causes Chagas disease

a) Leishmania donovani b) Plamsmodium
c) Giardia d) None of the above

85. In which group of organism the cell walls from two thin overlapping shells which fit together ?

a) Slime moulds b) Chrysophytes c) Euglenoids d) Dinoflagellates

86. Which of following organism have photogenic granules in their cytoplasm

a) Crysophytes b) Dinoflagellates c) Euglenoids d) Slime moulds

87. Which of following organisms are known as the chief producers in the oceans

a) Diatoms b) Dinoflagellates c) Slime moulds d) Euglenoids

88. The system that contains the maximum number of atoms is

a) 4.25 g of NH_3 b) 8 g of O_2 c) 2 g of H_2 d) 4 g of He

89. The largest number of molecules is in

a) 34 g of water b) 28 g of CO_2
c) 46 g of CH_3OH d) 54 g of N_2O_5

90. A block of mass 4 kg is pushed against a smooth vertical wall with an applied force of 120 N. The acceleration of the block will be? Choose the correct option. If required take value of acceleration due to gravity as 10 N/kg

a) 0 $m.s^{-2}$ b) 4 $m.s^{-2}$ c) 10 $m.s^{-2}$ d) 30 $m.s^{-2}$