NTS–X S15

NATIONAL TALENT SEARCH EXAMINATION, 2017-18

राष्ट्रीय प्रज्ञा शोध परीक्षा 2017–18

CENTRE CODE केंद्र संकेतांक

SEAT NO. आसन क्रमांक

STATE LEVEL EXAMINATION — QUESTION BOOKLET

राज्यस्तरीय परीक्षा – प्रश्नपुस्तिका

SCHOLASTIC APTITUDE TEST

शालेय क्षमता चाचणी

SEAL

CLASS X / इयत्ता 10वी

MEDIUM : MARATHI (मराठी) WITH ENGLISH VERSION

[Time : 14:15 P.M. to 15:45 P.M.]

[वेळ : 14:15 ते 15:45]

Maximum Marks : 100

एकूण गुण : 100

Time : 90 Minutes

वेळ : 90 मिनिटे

Total Pages : 64

एकूण पाने : 64

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you answer the questions. Answers are to be given on the answer-sheet, which combines both the tests:

1. Please write your Centre Code and Seat No. very clearly (only one digit in one block). Before writing your Seat No. get it ascertained from the Centre Conductor. Please see that no block is left unfilled and even zeros appearing in the Centre Code and Seat No. are correctly transferred to the appropriate blocks on the booklet and on the answer-sheet.

Example

CENTRE CODE केंद्र संकेतांक						

SEAT NO. आसन क्रमांक											

For all subsequent purposes your Centre Code and Seat No. shall remain the same. Centre once allotted will not be changed.

2. All questions carry **one** mark each.

3. Since **all questions are compulsory** do not try to read through the whole question paper before beginning to answer it.

4. Begin with the first question and keep on trying one question after another till you finish.

5. If you do not know the answer to any question, do not spend much time on it and pass on to the next one. Time permitting you can come back to the questions which you have left in the first instance and try them again.

6. Since the time allotted is very short you should make best use of it. The rough work is to be done in the box given under each page.

7. Remember you have to mark on your answers in **"Scholastic Aptitude Test"** Section of the answer-sheet only.

8. Answer to each question is to be indicated in the answer-sheet by encircling with black pen in the appropriate number of alternative in the answer-sheet from amongst the ones given for the corresponding question in the test booklet.

9. Do not write anything except Centre Code Seat No. and rough work anywhere in this booklet.

10. Now turn to the next page and start answering the questions.

1. Twinkling stars are seen due to _____ .

   (1) irregular emission of light from stars.

   (2) weather changes.

   (3) stars are far away

   (4) refractive index of air in the given region goes on changing and randomly.

2. Government of India celebrates 28 February as 'National Science Day' in the memory of _____ .

   (1) Dr. Hargovind Khurana

   (2) Dr. C.V. Raman

   (3) Dr. Vikram Sarabhai

   (4) Dr. A.P.J. Abdul Kalam

3. $F = G \dfrac{m_1 \times m_2}{R^2}$ is the formula to prove _____ .

   (1) Newton's First law of motion

   (2) Newton's Second law of motion

   (3) Newton's Third law of motion

   (4) Newton's Law of Gravitation

4. Calculate pressure exerted by a screw on the wooden plank if area of contact of the screw is 0.5 mm² and its weight is 50 N.

(1) 100×10^6 N/m²

(2) 50×10^6 N/m²

(3) 100×10^6 N

(4) 50×10^6 N

(handwritten: $\frac{50}{10^{-6}}$, 10mm = 1cm, 0.5mm = 0.05cm, 100cm = 1m, 100 mm² = 1cm², 1 mm² = 0.01cm² × 10⁻², 1 × 10⁻², 100 000cm² = 1m², 1×10⁻² cm² = 1×10⁻³, 10^{-6}, $10^{-2+(-4)}$ = $\frac{10^{-4}}{10}$ = 10)

5. The distance of distinct vision is _____ cm.

(1) 20

(2) 25

(3) 30

(4) 35

6. Observe the Columns I, II and III, match them and select the correct answer from given options.

I		II		III	
A.	Resistors in series	(a)	Required to move a unit positive charge from one point to another point.	(i)	$Q = \frac{Rl}{A}$
B.	Potential difference	(b)	Used to increase effective resistance in a circuit.	(ii)	$I = \frac{Q}{t}$
C.	Electric current	(c)	Net charge flowing through any cross section of a conductor in the given time.	(iii)	$R(s) = R_1 + R_2 + R_3 \dots R(n)$
D.	Resistivity	(d)	Depends on the material of the conductor	(iv)	$V = \frac{W}{Q}$

(1) A – b – iii,   B – a – iv,   C – c – ii,   D – d – i.

(2) A – c – iv,   B – b – iii,   C – d – i,   D – a – ii

(3) A – d – ii,   B – b – i,   C – a – iii,   D – c – iv

(4) A – a – i,   B – b – iii,   C – d – iv,   D – c – ii

7. MRI stands for _____.

   (1) Managing Response Index

   (2) Magnetic Resonance Index

   (3) Magnetic Resonance Imaging

   (4) Managing Response Imaging

8. Which of the followings is not property of magnetic lines of force.

   (1) The tangent at any point on the magnetic lines of pole gives the direction of the magnetic field at that point.

   (2) No two magnetic lines of pole can intersect each other.

   (3) Magnetic lines of force are crowded where the magnetic field is strong and far from each other where field is weak.

   (4) They are closed continuous curves. They start from south pole and end on north pole.

9. Select the incorrect statement stated below related to concave mirror.

   (1) Outer surface is coated with opaque substance. ✓

   (2) Inner surface is polished and thus reflective. ✓

   (3) It is called as converging mirror. ✓

   (4) It is used to observe the phenomenon of refraction. ✗

10. Observe the diagram of 'Electric DC generator, and select the correct pairing of labelling.
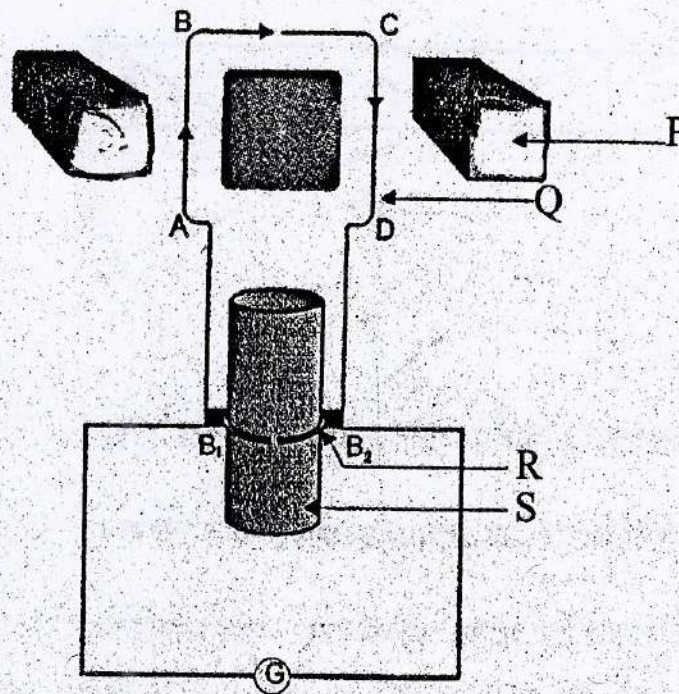
(1) P- Strong magnet, Q-Armeature, R- Splitring, S-Axle ✓

(2) P-Iron core, Q-Armeature, R-Splitring, S-Axle

(3) P-Strong magnet, Q-Iron core, R-Axle, S-Wire ✗

(4) P-Iron core, Q-Axle, R-Splitring, S-Strong magnet

11. A current of 0.4A is flowing through a bulb for 3 minutes. Find the charge that is flowing through the circuit.
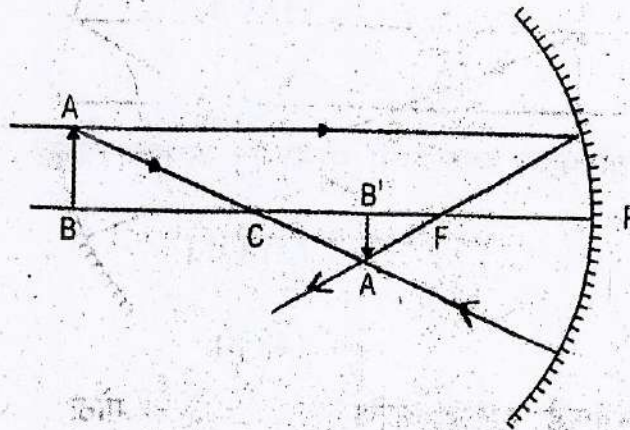
(1) 12 C.

(2) 36 C.

(3) 72 C.

(4) 450 C.

$$I = \frac{Q}{t}$$
$$\therefore Q = It$$
$$= 0.4 \times$$
$$= 4 \times 18$$

1 min = 60 sec
3 min = 180 sec

$$\begin{array}{r} 18 \\ \times 4 \\ \hline 72 \end{array}$$

12. Observe the adjacent ray diagram and select the correct option of position, nature and size of image.

(1) Beyond C, Real and inverted, Enlarged

(2) Between C and F, Real and inverted, Diministed ✓

(3) Beyond C, Real and inverted, Enlarged

(4) Between C and F, Virtual and Erect, Diminished ✓

13. Observe the circuit diagram and select incorrect option given below in answers.
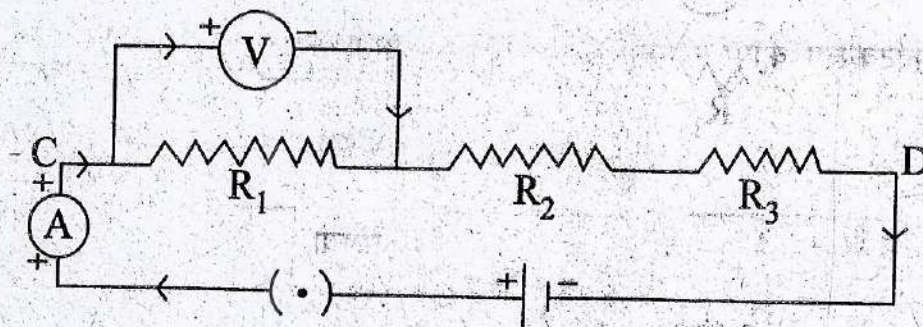
(1) Electric circuit is open ✗

(2) Resistors R_1, R_2 and R_3 are connected in series. ✓

(3) Ammeter 'A' is connected in series. ✓

(4) Voltmeter 'V' is connected in parallel. ✓

14. Which of the following Element loses and electron most easily.

    (1) Na   (2) Mg

    (3) K   (4) Ca

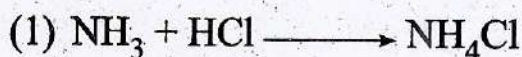**15.** Which of the following species does not have electrons equal to 18.

    (1) K^+ (2) Cl^-

    (3) Ca^{2+} (4) K

16. Which of the following is a double displacement reaction.

    (1) $NH_3 + HCl \longrightarrow NH_4Cl$

    (2) $CuSO_{4(aq)} + Fe_{(s)} \longrightarrow FeSO_4 + Cu$

    (3) $Na_2SO_4 + BaCl_2 \longrightarrow BaSO_4 + 2\,NaCl$

    (4) $CaCO_{3\,(s)} \xrightarrow{\Delta} CaO_{(s)} + CO_{2\,(g)}$
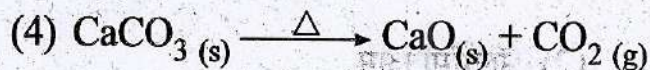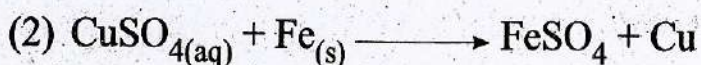
17. The colour of anhydrous copper sulphate is _____.

    (1) Blue   (2) White

    (3) Pink   (4) Green

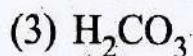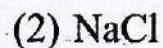**18.** Ajay has a stung by red ant, it causes itching & irritation. The sting consist of which of the following acid.
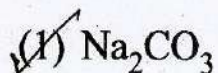
    (1) Acetic acid   (2) Butyric acid

    (3) Carbonic acid   (4) Formic acid

19. Which of the following compound is alkaline in aqueous medium.

(1) Na_2CO_3

(2) NaCl

(3) H_2CO_3

(4) $CuSO_4$
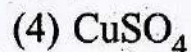
20. Which of the following compound conduct electricity in aqueous solution which is a covalent compound.

(1) Calcium Chloride

(2) Hydrogen Chloride

(3) Magnesium Oxide
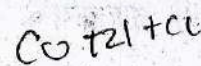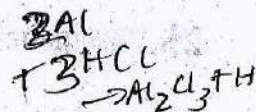
(4) Lithium Fluoride

21. Which of the following metal does not react with dilute HC1.
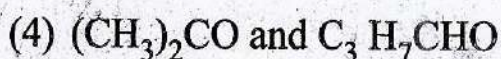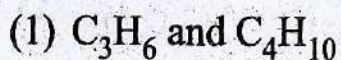
(1) Copper

(2) Aluminium

(3) Iron

(4) Zinc

22. Select a pair of homologous from the following.

(1) C_3H_6 and C_4H_{10}

(2) CH_3COOH and C_2H_5COOH

(3) C_4H_8 and C_3H_4

(4) $(CH_3)_2CO$ and C_3H_7CHO
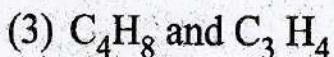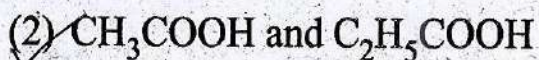
23. According to IUPAC rule, which of the following compound is prop – 1 – ene.

(1) $CH_3 - CH_2 - CH_3$

(2) $CH_3 - CH = CH_2$

(3) $CH_3 - CH = CH - CH_3$

(4) $CH_3 - C \equiv CH$
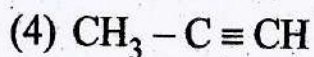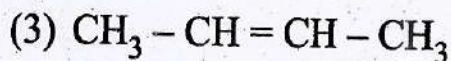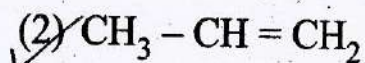
24. Stainless steel alloy is a mixture of .

(1) $Fe + C + Cr + Ni$

(2) $Ni + C + Cr + Al$

(3) $Fe + Cu + Al + C$

(4) $Fe + Zn + C + Ni$
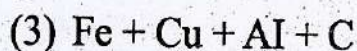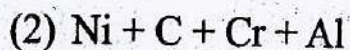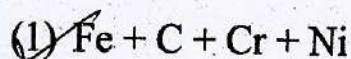
25. Which of the following elements will form an acidic oxide.
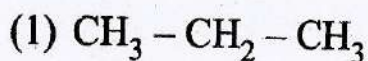
(1) An element with atomic number 7

(2) An element with atomic number 3 $\times$

(3) An element with atomic number 12 $\times$

(4) An element with atomic number 19 $\times$

26. Which of the general formulae represents the alkyl group.

(1) $C_n H_{2n}$

(2) $C_n H_{2n+1}$

(3) $C_n H_{2n+2}$

(4) $C_n H_{2n-1}$
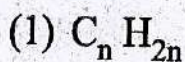
27. Raw material required for photosynthesis is .... and water.

(1) Chloroplast

(2) Sunlight

(3) Nitrogen

(4) Carbon-dioxide

28. Find the odd man.

(1) Uterus   (2) Ovary

(3) Vagina   (4) Testis
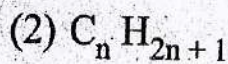
29. The prescribed limit of sound in decibles in silent zone during daytime is.

(1) 50   (2) 60

(3) 70   (4) 40

30. A green house gas N_2O remains for how many years in the atmosphere?

(1) 100   (2) 114

(3) 104   (4) 109

31. In human being blood goes through the heart .... times during each cycle.

(1) one   (2) three

(3) two   (4) four

32. Response to stimulus of touch is called ....

(1) Tropic movement

(2) Photo-tropic movement

(3) Hydro-tropic movement

(4) Seismonastic movement

33. Find the odd man.

(1) Fragmentation

(2) Regeneration

(3) Budding in Yeast

(4) Budding in Hydra

34. The total no. of pairs of chromosomes in human beings are ....

(1) 22

(2) 23

(3) 46

(4) 44

35. Match the column

Column A		Column B	
(i)	Darwin	(a)	heritability of acquired characteristics
(ii)	Lamarck	(b)	inheritance
(iii)	Mendel	(c)	natural selection

(1) (i) – (c), (ii) – (a) (iii) – (b)

(2) (i) – (b), (ii) – (c) (iii) – (a)

(3) (i) – (b), (ii) – (a) (iii) – (c)

(4) (i) – (a), (ii) – (c) (iii) – (b)

36. Which plant does not belong to group Thallophyta

(1) Ulothrix

(2) Spirogyra

(3) Chara

(4) Funaria

37. The excretory product in crystalline form of the plants........................ causes itching.

(1) Phyroid

(2) Raphyids

(3) Graphyid

(4) Cyanide

38. From different areas of the brain which is vision area?
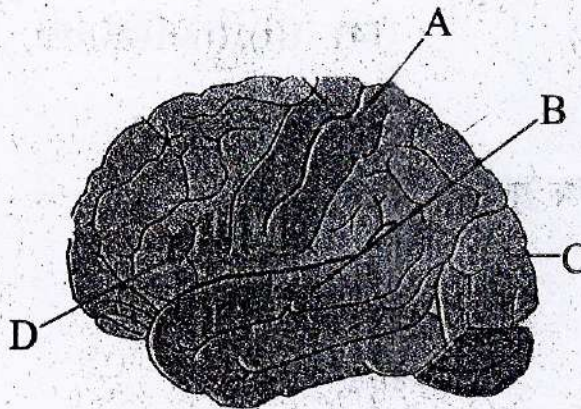
(1) A

(2) B

(3) C

(4) D

39. In female reproductive system ovaries secrete .... harmone.

(1) testesteron

(2) estrogen

(3) auxin

(4) thyroxine

40. Find the odd man.

(1) Adiantum   (2) Equisetum

(3) Selaginella   (4) Riccia

41. Select the correct chronological order from the given.

(i) America declared war against Germany

(ii) Austria declared war against Serbia

(iii) Assassination of Austrian Prince Francis Ferdinand

(iv) Italy entered into war from England and Frances side

(1) (ii), (iii), (i), (iv)   (2) (iii), (ii), (iv), (i)

(3) (iv), (i), (iii), (ii)   (4) (i), (iv), (iii), (ii)

42. Who took lead and sacrificed the cold war?

(1) Nikita Kruchev

(2) Eisenhower

(3) Truman

(4) Gorbochev

43. First colony established by England in America is _____.

(1) Mary land   (2) Virginia

(3) New york   (4) New Jersey

44. In which continent did the first international trade revolution take place?

(1) America

(2) Africa

(3) Europe

(4) Asia

45. Which one of the following options is applicable to the 'Nanking Treaty'?

(1) Won the Hong Kong Island

(2) The business of opium was granted

(3) Christion missionaries got permission to spread their religion in China.

(4) A group of six ports was opened for the foreign traders.

46. Identify the incorrect pair of the following.

(1) Assembly – To observe the administration of UNO

(2) Security Council – Permission to new membership

(3) Economic and social committee – To protect human rights and fundamental rights

(4) Secretariat – To interpret international law.

47. Find the correct option of the constructive effect of imperalism.

(1) Destruction of village autonomy

(2) Decline of values

(3) Rise of new leadership

(4) Suppression of under depended nations.

48. Which policy of Linen was opposed by the extremist communist leaders?

(1) Give land to landless farmers

(2) Allow private industry business to a limited extend

(3) To provide workers with basic needs instead of wages

(4) Domination of the working class in the government.

49. In which of following place parallel government was not established ?

(1) Meerut

(2) Pornia

(3) Baliya

(4) Midnapur

50. Out of following which issue was solved peacefully by the United Nations?

(1) The attack of Italy on Ethiopia

(2) Hitler's attack on Austria

(3) Japan's attack on Manchuria

(4) Italy's attack on Kaifu Island

51. 'People's Party' was established by_____.

(1) Sultan Majid

(2) Kamal Pasha

(3) General Tojo

(4) Emperor Genro

52. Which one of the following is not an 'Input Devices' of a computer?

(1) Key Board

(2) Mouse

(3) Monitor ✓

(4) Scanner

53. The discovery of the fact that 'the universe is not a divine creation' was made to the world by _____,

(1) Newton

(2) Holdmant

(3) Copernicus

(4) Galileo

54. Which king motivated the navigators in Europe?

(1) Nicholas

(2) Pancham George

(3) William ✓

(4) Henry

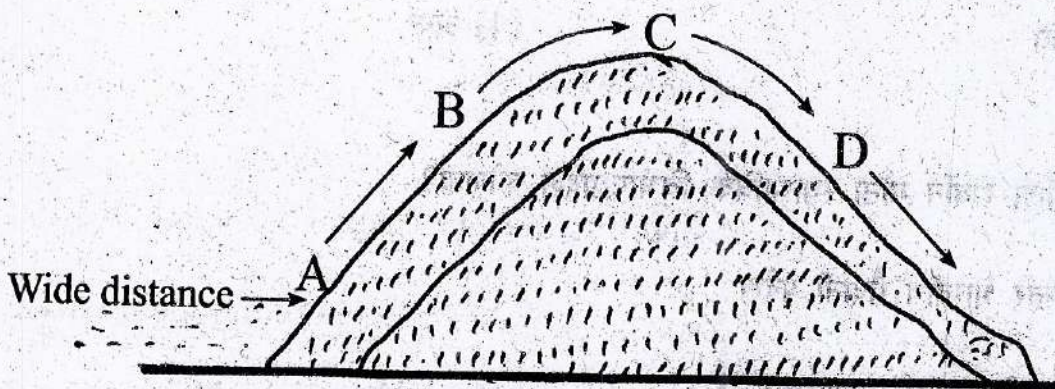**55.** Which Asian country was involved in Africa's imperialistic policy?

(1) Thailand

(2) Iraq

(3) Arab

(4) Iran ✓

56. In the given diagram which alphabet indicates the rain shadow area.

(1) A

(2) B

(3) C

(4) D ✓

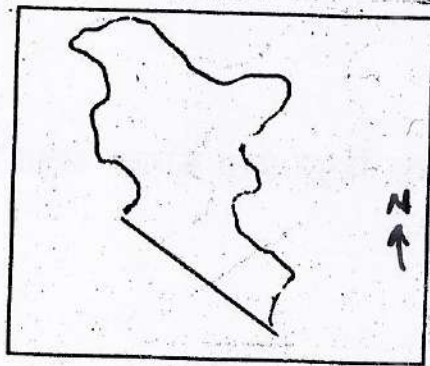**57.** _____ is a weight loosing raw material.

(1) Sugar cane

(2) Cotton

(3) Wool

(4) Silk

58. Which physical division is shown?

(1) Southern plateau region

(2) Western plain region

(3) Northern mountainous region

(4) Eastern coastal plain

59. How many state capitals are connected by the Golden Quadrilateral other than Delhi?

(1) Five

(2) Seven

(3) Six

(4) Eight

60. Areawise which is the largest division of India?

(1) North Indian plain region
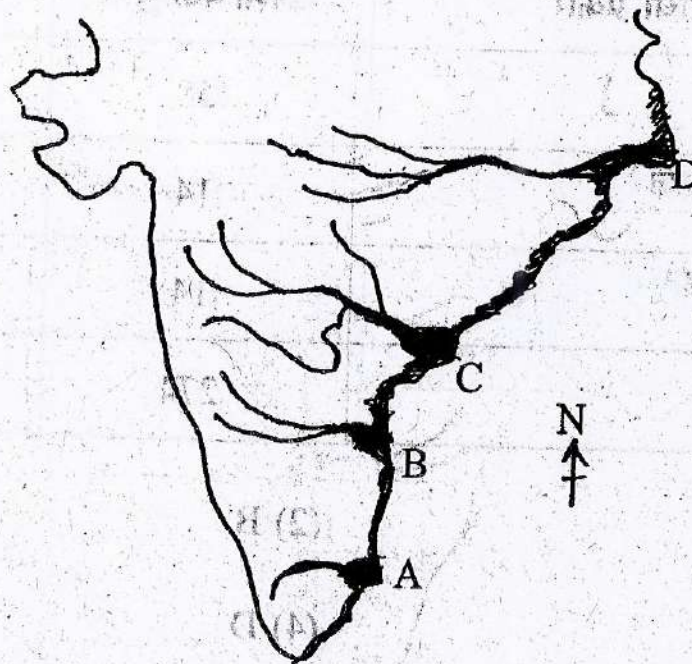
(2) The Indian plateau region

(3) Northern mountainous region

(4) Ghat coastal plain region and island

61. Asia's biggest Agricultural University is at _____.

(1) Hissar

(2) Ambala

(3) Ludhiana

(4) Amritsar

62. In the given map which alphabet represents the Godavari delta?

(1) A

(2) B

(3) C

(4) D

63. Which of the following feature is not formed by the rivers of Ganga Plain?

(1) Meanders

(2) Ox–bow lakes

(3) Natural levees

(4) 'V' shaped valley

64. Which of the following is not the sub division of Deccan Plateau

(1) Satpura–Mahadeo–Maikal ranges

(2) Maharashtra plateau

(3) Malwa plateau

(4) Karnataka plateau

65. Which of the following has wrong correlation.

	Type of Vehicle	Degree	Percentage
A	**Public Transport**	58	17.1
B	Professional vehicle	14	3.8
C	Three wheelers	14	3.8
D	Two wheelers	274	76.1

(1) A

(2) B

(3) C

(4) D

66. Which of the following is not the subdivision of Central Highlands?

(1) Malwa plateau

(2) Chota nagpur plateau

(3) The Vindhya ranges

(4) Dandakaranya

67. Find the correct pair.

    (1) North Mountainous region   Chinar

    (2) Rajasthan Plain   Dhak

    (3) Deccan Plateau   Khipbush

    (4) Punjab Haryana plain   Sandlwood

68. Find the incorrect pair.

    State   **Coastal area**

    (1) Karnataka   Kalangut

    (2) Kerala   Kovalam

    (3) Maharashtra   Guhagar

    (4) Goa   Kolwa

69. Proper sequence of peaks in the eastern ghats from South to North.

    (1) Nimgiri, Mahendragiri, Nallamala, Palkonda

    (2) Palkonda, Nallamala, Mahendragiri, Nimgiri

    (3) Nallamala, Palkonda, Mahendragiri, Nimgiri

    (4) Nimgiri, Mahendragiri, Pulkonda, Nallamala

70. In the middle ganga plain silk sarees are manufactured at _____.

    (1) Gorakhpur   (2) Samastipur

    (3) Mirzapur   (4) Bhagalpur

71. Who creates government and decides the powers of the regional level governments?

(1) Legislature

(2) Judiciary

(3) Executive

(4) Constitution

72. Kanshi Ram is 1984 founder _____ party.

(1) Samajwadi Party

(2) Bahujan Vikas Party

(3) Bahujan Samaj Party

(4) Bharip Bahujan Maha Sangh

73. In which country's electoral system does the vote of an indigenous person have more value than that of an Indian person?

(1) Fiji

(2) Estonia

(3) Mexico

(4) Finland

74. Due to the efforts of Eminent Social activists Anna Hazare, which right has been passed by the Indian Government?

(1) Right to Relaxation

(2) Labour Rights

(3) Right to Information

(4) Human Rights

75. Which one of the following is the first political work of the citizen?

(1) to bring about people togethar

(2) to caste a vote

(3) to be present at meeting conducted

(4) to comment on the government

76. Which of the following is not part of the consumer's Redressal Agencies'?

(1) The taluka Forum

(2) The district Forum

(3) The State Commission

(4) The National Commission

77. Who will be benefited during Inflation?

(1) Debtors

(2) A person with steady Income

(3) A person infesting in equities

(4) Creditors

78. Monetary measures to control inflation is _____.

(1) Reduction in Public expenditure

(2) Increase in cash reserve ratio

(3) Increase in taxes ✗

(4) Surplus budget

79. Which of the following is extremely necessary for men?

(1) Car   (2) Health

(3) Fan   (4) Furniture

80. Identify the statement which relates to 'optimum population'?

(1) Available resources are not used enough

(2) Creates stress on available resources

(3) Population is not enough to consume resources completely

(4) Indicates ideal size of population of a country.

81. How many numbers between 10 to 300. When divided by 4, leave remainder 3?

(1) 71   (2) 72

(3) 73   (4) 74

82. Which of the following are the roots of the quadratic equation $x^2 + 2\sqrt{2}x - 6 = 0$?
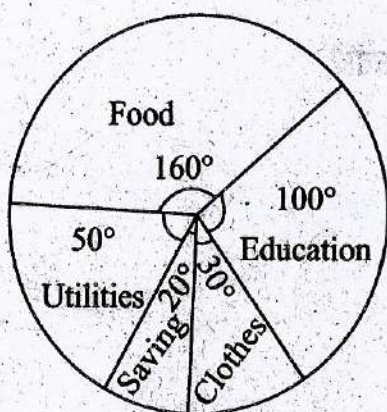
(1) $-3\sqrt{2}, \sqrt{2}$ (2) $3\sqrt{2}, -2\sqrt{2}$

(3) $3, 2$ (4) $3, 2\sqrt{2}$

83. The expenditure incurred on different items in a family is shown in the adjacent pie diagram. If the amount of house rent is ₹10,000 then find the amount incurred on education.

(1) ₹20,000   (2) ₹32,000

(3) ₹72,000   (4) ₹30,000

SPACE FOR ROUGH WORK

84. A train travels some distance at a constant speed. If the speed of the train would have increased by 15km/hr, then it would have requited 2 hours less. But if the speed of the train would have decreased by 5km then to cover the same distance it would have required 1 hour more. Find the distance covered by the train.

(1) 120 km

(2) 240 km

(3) 360 km

(4) 400 km

85. $\left(\sqrt[3]{3}+\sqrt[3]{2}\right)\left(\sqrt[3]{9}+\sqrt[3]{4}-\sqrt[3]{6}\right)=?$

(1) 5

(2) $\sqrt[2]{5}$

(3) $\sqrt[6]{5}$

(4) $\sqrt[3]{5}$

$x\cancel{6} = \dfrac{17t+28\times t}{3}$

$= \dfrac{17t^2+28t}{3}$

SPACE FOR ROUGH WORK

$x \quad t \qquad \therefore S = \dfrac{x}{t} \qquad x = S\times t$

$15t+2t-St+2S-2t+30$

$17t = 3S-28$

$t = \dfrac{3S-28}{17}$

$(S+15)\times(t-2)=(S-5)\times(t+1)$

$S(t-2)+15(t-2) = S(t+1)-5(t+1)$

$St-2S+15t-30 = St+S-5t-5)$

86. The number obtained by adding 12 to a natural number is 160 times of the multiplicative inverse of that natural number. Find the number.

(1) 20

(2) 16

(3) 12

(4) 8

87. There are 50 cards marked with the numbers 1 to 50. One card is drawn at random. What is the probability that number on the card is a prime number?

(1) $\dfrac{3}{10}$

(2) $\dfrac{1}{5}$

(3) $\dfrac{1}{4}$

(4) $\dfrac{2}{15}$

88. If the polynomial $x^3 + 2x^2 - \alpha x - 12$ is divided by $(x - 4)$ the remainder is 52. Find the value of 'α'.

(1) $\dfrac{11}{2}$

(2) -5

(3) 8

(4) -8

SPACE FOR ROUGH WORK

89. When two simultaneous equations are solved by Cramer's Rule.

We get x = 9 and D = 4; If $D_x = \begin{vmatrix} 7 & m \\ 5 & 8 \end{vmatrix}$ then find the value of m.

(1) – 4

(2) 4

(3) – 9

(4) 9

[handwritten: 36 = 56 + 5m; –20 = 5m; m = –4]

90. Following table gives the number of trees planted by the students in a school on 'Environment Day, Observe the table and find mode of the trees planted by the students.

Number of plants	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
Number of students	30	42	50	80	50	40

(1) 80

(2) 50

(3) 45

(4) 35

[handwritten: $(a+b)^3 = a^3 - 3a^2b + 3ab^2 - b^3$]

91. $\dfrac{Cos^2 30° + Cos30° \, Sin30° + sin^2 30°}{Cos^3 30° - sin^3 30°} = ?$

(1) 1

(2) $\sqrt{3} + 1$

(3) $\sqrt{3} - 1$

(4) $\dfrac{1}{\sqrt{3}-1}$

[handwritten work to the right]

[handwritten rough work]

92. If $\tan \theta = -1$ then find the value of $\dfrac{\text{Sec } \theta + \text{Cosec } \theta}{\text{Cos } \theta - \text{Sin } \theta}$

(1) 0

(2) 1

(3) $-\sqrt{2}$

(4) $\sqrt{2}$

93. Line PQ ∥ line AB. The slope of line AB is $\dfrac{1}{2}$. y–intercept of line PQ is 3. Find x- intercept

(1) 3

(2) –2

(3) –6

(4) 6

94. Find the ratio of the volume to total surface area of a sphere of radius $\sqrt{7}$ cm.

(1) $\dfrac{\sqrt{7}}{3}$

(2) $\dfrac{7}{3}$

(3) $\dfrac{7\sqrt{7}}{3}$

(4) $\dfrac{\sqrt{7}}{\sqrt{3}}$

$\dfrac{\sin}{\cos}$ $\dfrac{\cos \cot \theta = t}{\sec}$

$\sin \theta = -\cos \theta$ $\dfrac{\sec}{\csc} = \tan$

$\sec \theta = -\csc \theta$

$\dfrac{\cancel{x} + v}{3}$ $\dfrac{\sqrt{7}}{3}$ 0 $\dfrac{\frac{4\pi r^3}{3}}{4\pi r^2}$

SPACE FOR ROUGH WORK

ϕ A $m = \dfrac{1}{2}$ $-3 \times 2 = x$

3

Q B $y = mx + c$
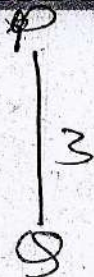
$0 = \frac{1}{2}x + 3$

95. The diameter of the base of a cylindrical metal block is 6.6 cm and its height is 0.4m, How many discs of diameter 2.2 cm and height 0.2 cm can be cut from this metal block ?

(1) 180

(2) 600

(3) 1200

(4) 1800

[handwritten: $n = 0.4m$]

[handwritten: 1.1]

[handwritten: 3.3 cm]

96. In the adjacent figure PM $\perp$ QS. R N$\perp$ QS. Diagonals QS and PR intersect at 'O' A (ΔPMO): A (Δ RNO) = 1:4 then find.

A (ΔPQS) : A (ΔRQS)

(1) $\dfrac{1}{16}$

(2) $\dfrac{1}{8}$

(3) $\dfrac{1}{4}$

(4) $\dfrac{1}{2}$

[handwritten rough work: $2\pi r(r+h)$]

[handwritten: $\dfrac{2 \times 22 \times 3.3(3.3+0.4)}{7}$]

[handwritten: $\dfrac{20 \times 22}{7} \times (1.1) \times 0.2$]

[handwritten calculations: 6.6x, 6.6 × 3.7, 1462, +198x, 2442, 24420/242, 1.21 × 0.2, .242x]

Figure labels: P, Q, M, O, N, S, R
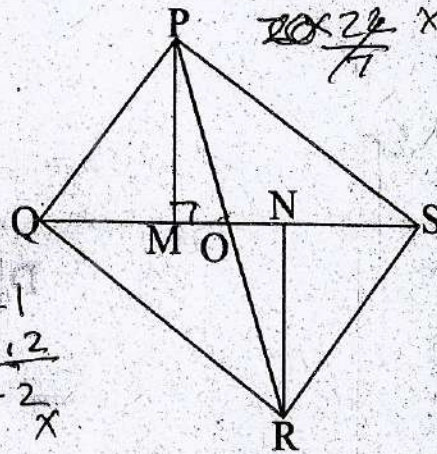
SPACE FOR ROUGH WORK

97. The longest side of a triangle is 20 cm. and other side is 10 cm. The area of the triangle is 80 cm^2. Find the length of the remaining side of the triangle.
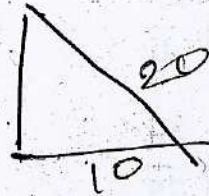
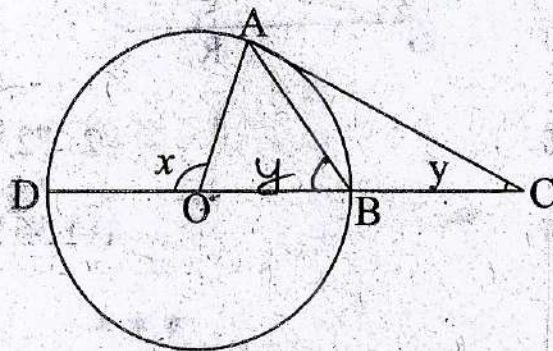(1) $2\sqrt{65}$

(2) $5\sqrt{10}$

(3) $10\sqrt{3}$

(4) 15

[handwritten: $x+10=20$, with sketch labeled 20 and 10]

98. In the adjoining figure 'O' is the center of the circle AB = BC m∠AOD = x and m∠ACB = y then find $\dfrac{x}{y}$.

(1) $\dfrac{1}{2}$

(2) 2

(3) 4

(4) $\dfrac{1}{4}$

[handwritten: $\dfrac{2y}{y}$]

99. In the adjoining figure if AB = 16 and CD = 40 then find the ratio of A (ΔOCD)

  : A (ΔOAB)

(1) $\dfrac{5}{2}$

(2) $\dfrac{2}{9}$

(3) $\dfrac{25}{4}$
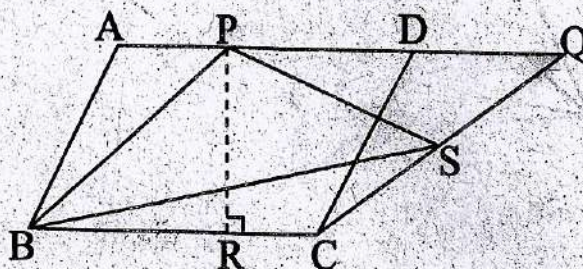
(4) $\dfrac{4}{25}$
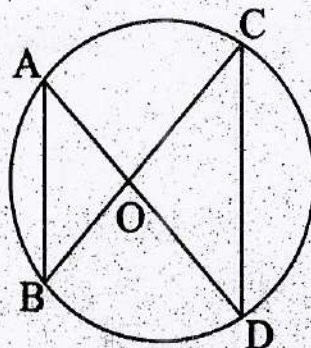
100. In the adjoining figure $\square$ABCD and $\square$PBCQ are parallelogram BC = 12 cm

PR= 8 cm. Find A (ΔPSB).

(1) 96 cm^2 (2) 72 cm^2

(3) 48 cm^2 (4) 36 cm^2

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