Zenith Program (Std X)
Preparatory Program –NTSE Stage 1
2015 Test Paper - – Scholastic Aptitude Test

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Time – 90 Mins | Marks -90

Work Hard . Make History

1. Fuse wire should be placed in the path of ..... wire.

(1) neutral (2) phase

(3) earth (4) none of these

2. The average drift velocity of electrons in a wire not connected to a cell is .....

(1) zero (2) always positive

(3) infinite (4) always negative

3. Most of the power stations produce .....

(1) direct current (2) electric power

(3) potential difference (4) alternating current

4. Colour of scattered light depends .....

(1) only on size of scattering particle

(2) only on length of travelling light

(3) both size of scattering particle and length of travelling light

(4) on colour of incident light

5. If speed of light travelling from air to a medium decreases by 40%, find the refractive index of the medium with respect to air.

(1) 2.5 (2) 1.67 (3) 1.3 (4) 1.25

6. Choose the correct alternative which matches second and third coloumn with first column:

	Column - I		Column - II		Column - III
(I)	thickening of eye lens	(A)	focal length increases	(i)	ciliary muscles contract
(II)	thining of eye lens	(B)	focal length decreases	(ii)	ciliary muscles elongate

(1) (I) - (B) - (i), (II) - (A) - (ii)

(2) (I) - (B) - (ii), (II) - (A) - (i)

(3) (I) - (A) - (i), (II) - (B) - (ii)

(4) (I) - (A) - (ii), (II) - (B) - (i)

7. In an electric circuit 1×10^{18} hydrogen ions are travelling per second in the right direction while double number of electrons are travelling per second in left direction, the total current through the path is ..... (Charge on one electron = 1.6×10^{-19} C)

(1) 4.8 A (2) 1 A (3) 0.48 A (4) 0.1 A

8. Choose the correct alternative, in relation to properties of magnetic lines of force

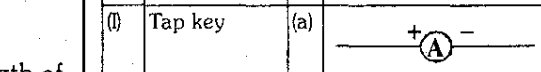
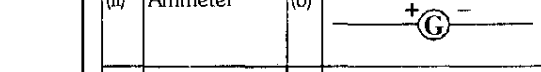
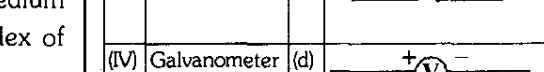
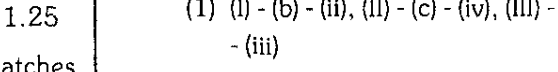
(1) magnetic lines of force start from south pole and end on north pole.

(2) magnetic lines of force intersect each other at the poles

(3) magnetic lines of force are far from each other where the field is strong

(4) tangent at any point on the magnetic lines of force gives the direction of the magnetic field at that point.

9. Choose the correct alternative which matches second and third coloumn with first column:

	Column - I		Column - II		Column - III
(I)	Tap key	(a)		(i)	to be connected in series
(II)	Ammeter	(b)		(ii)	to be connected in parallel
(III)	Voltmeter	(c)		(iii)	detects presence of current
(IV)	Galvanometer	(d)		(iv)	to keep circuit open

(1) (I) - (b) - (ii), (II) - (c) - (iv), (III) - (a) - (i), (IV) - (d) - (iii)

(2) (I) - (a) - (i), (II) - (b) - (iii), (III) - (c) - (iv), (IV) - (d) - (ii)

(3) (I) - (d) - (iii), (II) - (b) - (iv), (III) - (a) - (i), (IV) - (c) - (ii)

(4) (I) - (c) - (iv), (II) - (a) - (i), (III) - (d) - (ii), (IV) - (b) - (iii)

10. Choose the wrong statement related to virtual image:

(1) images are always produced by plane mirrors only

(2) images are always erect

(3) image cannot be obtained on the screen

(4) image is formed at a point where reflected and refracted rays appear

11. .....identifies quality of sound in human ear.

(1) Nerve impulse (2) Pinna

(3) Cochlea (4) Ear drum

12. Cleaning of dust from carpet is due to .....

(1) inertia of motion (2) inertia of rest

(3) inertia of direction (4) momentum

13. Arrange the following metals in increasing resistivities Chromium, Nickel, Manganese, Iron

(1) Nickel - Iron - Manganese - Chromium

(2) Nickel - Iron - Chromium - Manganese

(3) Manganese - Chromium - Iron - Nickel

(4) Chromium - Iron - Manganese - Nickel

14. The total number of elements present in 4th period of modern periodic table is

(1) 8 (2) 18 (3) 32 (4) 12

15. Which of the following medicines is used for Indigestion?

(1) Antibiotic (2) Antacid

(3) Analgesic (4) Antiseptic

16. Which of the following is an ore of mercury?

(1) Bauxite (2) Haematite

(3) Cinnabar (4) Dolomite

17. KNO_3(s) when mixed with water, temperature of solution falls, this reaction is

(1) Endothermic reaction

(2) Exothermic reaction

(3) Cooling reaction

(4) Heating reaction

18. Ammonium chloride is a salt of

(1) Weak Acid and Weak Base

(2) Weak Acid and Strong Base

(3) Strong Acid and Strong Base

(4) Strong Acid and Weak Base

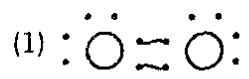
19. What is the IUPAC name of the following compound?

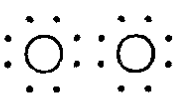
$$CH_3 - CH = CH - CH_2 - CH_3$$

(1) pent-2-ene (2) pent - 1 - ene

(3) pent-3-ene (4) 1-methyl-but-2-ene

20. Which of the following is correct electron dot structure of oxygen?

(1)  (2) 

(3)  (4) 

21. What type of oxide would Eka-Aluminium (Gallium) form?

(1) GaO_3 (2) Ga_3O_2 (3) Ga_2O_3 (4) GaO

22. During Electrolytic refining of copper

(a) Pure Copper acts as Anode

(b) Pure Copper acts as Cathode

(c) Impure Copper acts as Anode

(d) Impure Copper acts as Cathode

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

23. Which of the following is not an example of single displacement reaction?

(1) $CuO + H_2 \rightarrow H_2O + Cu$

(2) $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$

(3) $AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$

(4) $Zn + 2HCl \rightarrow ZnCl_2 + H_2$

24. The ratio of Hydrogen and Oxygen by mass in water is

(1) 1 : 8 (2) 8 : 1 (3) 2 : 1 (4) 1 : 2

25. Which of the following reactions is involved in Black and White photography?

(1) $2Cu + O_2 \xrightarrow{\Delta} 2CuO$

(2) $2AgBr \xrightarrow{\text{sunlight}} 2Ag + Br_2$

(3) $ZnO + C \longrightarrow Zn + CO$

(4) $CaCO_3 \xrightarrow{\Delta} CaO + CO_2$

26. Which of the following reactions wil not occur?

(1) $Mg + \text{dil } H_2SO_4 \rightarrow MgSO_4 + H_2$

(2) $Cu + \text{dil } 2HCl \rightarrow CuCl_2 + H_2$

(3) $2Al + \text{dil } 6HCl \rightarrow 2AlCl_3 + 3H_2$

(4) $Fe + \text{dil } 2HCl \rightarrow FeCl_2 + H_2$

27. Which organism breakdown the food material into simple substance outside the body and then absorb it?

(1) Mushroom (2) Cuscuta

(3) Ticks (4) Tape worms

28. The ..... receives deoxygenated blood collected from different organs of the body via large vein called vena cava.

(1) Left atrium (2) Right atrium

(3) Right ventricle (4) Left ventricle

29. Which plants has a trap, which looks and smells like a flower to insects?
(1) Drosera (2) Balsam
(3) Lotus (4) Venus Fly trap

30. Which of the following organisms has a nervous system that is at very primitive stage of development?
(1) Amoeba (2) Hydra
(3) Earthworm (4) Paramoecium

31. The vegetative reproduction in Bryophyllum takes place through which organ?
(1) Root (2) Stem (3) Leaf (4) Seed

32. A pollen tube, produced from the pollen grain, contains .....male gametes.
(1) One (2) Two (3) Seven (4) Eight

33. In Mendel's dihybrid cross how many groups of phenotypic characters are found in F_2 generation (second filial generation)?
(1) Four (2) Two
(3) One (4) Sixteen

34. According to palaeontological evidences, identify the correct sequence of animal development:
(1) Fish → Reptiles → Amphibians → Birds → Mammals
(2) Fish → Reptiles → Birds → Amphibians → Mammals
(3) Fish → Amphibians → Birds → Reptiles → Mammals
(4) Fish → Amphibians → Reptiles →Birds → Mammals

35. According to origin, identify the secondary air pollutant.
(1) SO_3
(2) Ash
(3) Smoke
(4) Radioactive compound

36. In residential area at night, the standard limit of sound intensity is .....Decibel.
(1) 55 (2) 70 (3) 45 (4) 40

37. The absorption of useful material from urine before it is passed out takes place through ..... epithelium tissue.
(1) Cuboidal (2) Ciliated columnar
(3) Columnar (4) Stratified squamous

38. Which is the smallest unit of classification of organisms?
(1) Genus (2) Species
(3) Family (4) Order

39. Female ovaries secrete _____ hormone.
(1) Estrogen (2) Testosterone
(3) Auxin (4) Gibberellins

40. Liver gland secretes .....
(1) Pancreatic juice
(2) Bile juice
(3) Gastric juice
(4) Various digestive juices

41. What was the fact that caused the failure of the League of Nations? Choose from the following alternatives:
(1) Hitler's attack on Austria
(2) The issue of Sweden-Finland and Holland
(3) To take vote in Saar province
(4) Attack of Italy on Kaifu island

42. Which one of the following nations was not member at the time of G-7 organization established?
(1) Holland (2) Japan
(3) Italy (4) France

43. Which one of the following was Supreme God of Greeks?
(1) Hera (2) Apollo (3) Zeus (4) Venus

44. The following pairs are given about discover and discovery. Choose incorrect pair from the following:
(1) Mungopark ---- Discovered basins of the Niger river
(2) Livingstone ----Discovered basins of the Zambezi river
(3) Christopher Columbus ----Discovered American Continent
(4) Bartholomew Dias ----Circumnavigation of the earth

45. Which one of the following reasons is inappropriate about cold war?
(1) Supremacy between America and Russia
(2) Non-Alliance Movement
(3) Communism in Soviet Russia
(4) Differences in philosophical thinking

46. The office which is shown in the given picture belongs to which International Organization?

(1) United Nations Organization

(2) League of Nations

(3) International Court

(4) International Worker's Organization

47. Arrange the following events in chronological order

(I) Treaty between England-France

(II) A political revolution in Turkey

(III) A friendship treaty between English -Japan

(IV) A friendship treaty between England - Russia

Option:

(1) (I), (III), (II), (IV) (2) (II), (I), (IV), (III)

(3) (III), (I), (IV), (II) (4) (IV), (III), (II), (I)

48. "The rule of one lion is ever better than hundred rats." Who had proclaimed this statement?

(1) Montesquieu

(2) Voltaire

(3) Mirabo

(4) Napoleon Bonaparte

49. Which one of the princely state was merged under the pretext of maladministration?

(1) Satara (2) Nagpur

(3) Sambalpur (4) Ayodhya

50. Educational institutions were established in the colonies by each of the colonialistic nation because

(1) To get Western education

(2) To eradicate ignorance of the people in the colony

(3) To get secondary grade staff for the administrative convenience

(4) To popularize and spread their culture

51. Which one is the desctructive effect of Imperialism?

(1) Spread of Education

(2) Intellectual Change

(3) Physical Reformations

(4) Trade of Slaves

52. Who took advantages of the dispute between France and Italy about religious and colonial problems?

(1) Kaiser William II (2) Hitler

(3) Bismarck (4) Benito Mussolini

53. During the cold war which country was not a part of the 'SEATO TREATY' established under the leadership of America?

(1) Pakistan (2) Philippines

(3) Indonesia (4) Thailand

54. Which revolution made an attempt to create a social order without religion class and exploitation?

(1) Industrial Revolution

(2) Meiji Revolution

(3) Russian Revolution

(4) Formation of United Nations Organization

55. Who is considered as 'The Father of China'?

(1) Dr. Sun-Yat-Sen (2) Yuan-Shih-Kai

(3) Kang-Yu-Wei (4) Mao-Tse-Tung

56. The region situated to the foothills of Jalpaiguri and Darjeeling is known as .....

(1) Marshy area (2) Flood plain

(3) Duars (4) Doab

57. Which group has correct order of rivers from south to north in the Deccan Plateau region?

(1) Cauvery → Godavari → Mahanadi → Tungabhadra

(2) Cauvery → Mahanadi → Tungabhadra → Godavari

(3) Cauvery → Tungabhadra → Godavari → Mahanadi

(4) Cauvery → Godavari → Tungabhadra → Mahanadi

58. Which of the following factors is going to reduce the soil degradation?

(1) Excess use of soil

(2) Excess irrigation

(3) Excess use of chemical fertilizers

(4) Crop rotation method

59. Which of the following states do not share land border with Myanmar?

(1) Meghalaya (2) Manipur

(3) Mizoram (4) Nagaland

60. Mining occupation is well developed on the Chhota Nagpur plateau because

(1) Road transport

(2) Availability of minerals

(3) Generation of employment

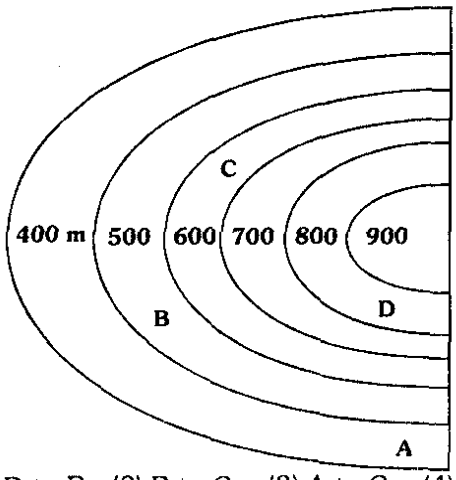
(4) Labour supply

61. The largest wool market of Asia is .....

(1) Barmer (2) Bikaner

(3) Jaisalmer (4) Jodhpur

62. The direction of river in the following contour pattern is



(1) D to B (2) B to C (3) A to C (4) C to D

63. Find the wrong pair

(1) Coast of Gujrat --Region of gulf

(2) Konkan Coast -- Region of many headlands

(3) Malabar Coast -- Region of backwaters

(4) Coromondel Coast -- Delta region of Narmada

64. The correct order of rivers of Punjab-Haryana plains from North to South is .....

(1) Beas → Satluj → Ghaggar

(2) Ghaggar → Beas → Satluj

(3) Satluj → Beas → Ghaggar

(4) Satluj → Ghaggar → Beas

65. Out of the total area under cultivation of Himachal Pradesh how much area is under irrigation?

(1) 1/4 (2) 1/5 (3) 1/3 (4) 1/2

66. The largest physical division of India is .....

(1) The North Indian Plain

(2) The Mountainous region in the North

(3) The Peninsular Plateau Region

(4) The Coastal Plains

67. Which of the following is a one-dimensional diagram?

(1) Quadrilateral (2) Divided Circle

(3) Divided Rectangle (4) A line graph

68. The famous place of 'Kumbha Mela' from the Central Highlands is

(1) Ujjain (2) Nasik

(3) Prayag (4) Haridwar

69. Garhjat hills occupied the North-Western part of which state?

(1) Tripura (2) West Bengal

(3) Meghalaya (4) Odisha

70. What is the cause of not getting High grade coal in Meghalaya?

(1) Less proportion of limestone

(2) Less content of Sulphur

(3) Greater proportion of coke

(4) Greater proportion of Sulphur

71. "In a democracy each adult citizen must have one vote and each vote must have one value." Which one of the following countries is irrelevant for this statement?

(1) Russia

(2) China

(3) Fiji

(4) United Arab Emirates

72. What is recall?

(1) To call the representative back

(2) Presenting proposal of Law by the people

(3) Taking decisions on important public issues on the basis of public opinion

(4) To change the government

73. The first meeting of the Constituent Assembly was held on .....

(1) 26th January, 1950

(2) 26th November, 1949

(3) 10th February, 1948

(4) 9th December, 1946

74. ..... seats are reserved for the Scheduled Tribes in Lok Sabha.

(1) 43 (2) 40 (3) 41 (4) 45

75. Which one of the following inequality is excess then democracy remains only in name?

(1) Economic (2) Social

(3) Cultural (4) Political

76. In Socialism, the decisions about production depend upon the objectives and priorities laid down by .....

(1) Food Corporation

(2) Central Planning Commission

(3) Reserve Bank

(4) Central Productive Body

77. How much percentage of share of Tertiary Sector is in the Gross Domestic Product in India 2011?

(1) 18 (2) 26 (3) 45 (4) 56

78. Consumer must be provided with accurate information about quality, purity, price, quantity and the standard of the goods and service. What right of a consumer is this?

(1) Right to choose

(2) Right to safety

(3) Right to be informed

(4) Right to consumer education

79. Which is incorrect reason out of the following reasons to increase in demand for goods and services?

(1) Lopsided production

(2) Increase in export

(3) Reduction in tax

(4) Availability of credit

80. What factors are included as 'Arteries' to an economy?

(1) Small Scale and Cottage Industries

(2) Transportation and Communication

(3) Capital and Labour Supply

(4) Government Policy and Credit Supply

81. In the year 2013, Pravin saves Rs. 1 on the first day, Rs. 3 on the second day, Rs. 5 on the third day and so on. Find the total amount of his saving in that year.

(1) Rs. 133225 (2) Rs. 132225

(3) Rs. 123225 (4) Rs. 134225

82. Ganesh has to pay Rs. 482 for 19 apples and 11 guavas. If he would have exchanged the number of apples and guavas purchased, then he would have paid Rs. 64 less. Find how much more amount he has to pay to purchase 1 apple than 1 guava?

(1) Rs. 19 (2) Rs. 8

(3) Rs. 11 (4) Rs. 7

83. Find the quadratic equation whose one root is $2+\sqrt{5}$

(1) $x^2 - 4x + 1 = 0$ (2) $x^2 - 4x - 1 = 0$

(3) $x^2 - 4x + 3 = 0$ (4) $x^2 - 4x - 3 = 0$

84. In a frequency distribution table, modal value of the wages of 130 workers is Rs. 97.50, L = 94.5, $f_m = x + 15$; $f_1 = x$; $f_2 = x + 5$. Find the upper limit of the modal class.

(1) 96.5 (2) 97.5 (3) 98.5 (4) 99.5

85. Given the equality of the following determinants. Find the value of (a + b)

$$\begin{vmatrix} 4 & 3 \\ 6 & a \end{vmatrix} = \begin{vmatrix} 6 & b \\ 4 & 5 \end{vmatrix}$$

(1) 8 (2) 12 (3) 14 (4) 16

86. If $a = \sqrt{6} + \sqrt{5}$; $b = \sqrt{6} - \sqrt{5}$, then find the value of $2a^2 - 5ab + 2b^2$.

(1) 36 (2) 37 (3) 39 (4) 41

87. Out of a group of Swans, $\frac{7}{2}$ times the square root of number of Swans are playing on the shore of the tank. Remaining two are quarreling in the water. Calculate the total number of Swans. Find the number of Swans playing on the shore of the tank.

(1) 14, 16 (2) 16, 12

(3) 14, 12 (4) 16, 14

88. A coin and a die is tossed simultaneously. Find the probability of the event that 'tail'and a prime number turns up?

(1) $\frac{1}{2}$ (2) $\frac{1}{4}$ (3) $\frac{1}{3}$. (4) $\frac{2}{3}$

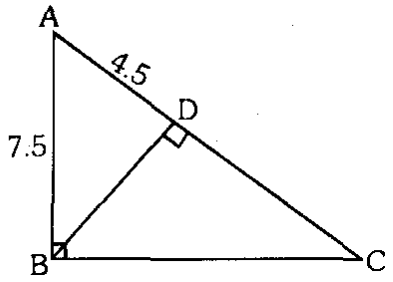
89. In a frequency distribution median is $\frac{11}{10}$ times the mean, and mode is 5.2. Find the median.

(1) 4.4 (2) 4.3 (3) 4.1 (4) 4.0

90. If $\frac{x}{2y+z-x} = \frac{y}{2z+x-y} = \frac{z}{2x+y-z}$ and $x + y + z \neq 0$; then what is each ratio equal to

(1) $\frac{1}{2}$ (2) $\frac{1}{3}$ (3) 2 (4) $\frac{2}{3}$

91.



In the above figure ΔABC, $m\angle B = 90^0$, $BD \perp AC$, $AD = 4.5$, $AB = 7.5$, then find $A(\Delta BDC) : A(\Delta ABC)$

(1) 16 : 25 (2) 4 : 5 (3) 25 : 16 (4) 5 : 4

92. If $\sin\theta = -0.6^0$, then find the quadrant from which the terminal arm making an angle of θ^0 passes.

(1) I quadrant (2) II quadrant

(3) III quadrant (4) IV quadrant

93. A roller of diameter 1.4 m and length 1.4 m is used to press the ground having area 3080 sq. m. Find the number of revolutions that the roller will make to press the ground.

(1) 700 (2) 500 (3) 1000 (4) 800

94. If a line passes through the intersection point of the graphs of the lines $x + 2y = 7$ and $x - y = 4$ and the origin, then find the equation of the line.

(1) $y = 0.5x$ (2) $y = 5x$

(3) $y = 0.2x$ (4) $y = 2x$

95. In ΔABC, $m\angle BAC = 140^0$, 'P' is the centre of the circumcircle of ΔABC. Find $m\angle PBC$.

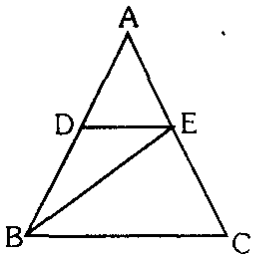
(1) 40^0 (2) 50^0 (3) 80^0 (4) 100^0

96. If the ratio of the radii of the circular ends of a conical bucket whose height is 60cm is 2:1 and addition of the area is 770 sq.cm. Find the capacity of the bucket in litres.

(1) 21.56 litres (2) 215.6 litres

(3) 21560 litres (4) 2156 litres

97.



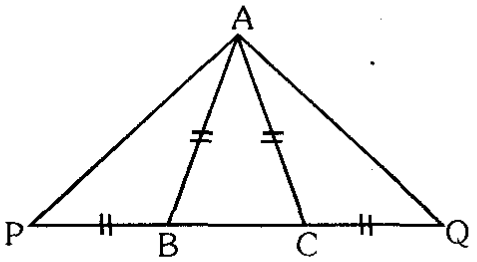
In the above figure ΔABC, $DE \parallel BC$,

$A(\Delta ADE) = 48$ sq.cm., $\frac{AD}{DB} = \frac{4}{5}$. Find the area of ΔBEC.

(1) 60 sq. cm (2) 95 sq. cm

(3) 108 sq. cm (4) 135 sq. cm

98.



In the above figure ΔAPQ, P-B-C-Q and $AB = AC = PB = CQ$. Find the angle congruent to $\angle PAQ$

(1) $\angle ACP$ (2) $\angle ABP$ (3) $\angle APC$ (4) $\angle BAQ$

99. Find the value of $\frac{\sin 48^0 + \cos 42^0}{\cot 42^0} - \frac{1}{\sec 48^0}$

(1) $\cos 48^0$ (2) $\sin 48^0$

(3) $\sec 48^0$ (4) $\cot 42^0$

100. The incircle of ΔABC touches the sides AB, BC and AC in the point P, Q and R respectively. If AP = 7 cm, BC = 13cm, find the perimeter of ΔABC.

(1) 27 cm (2) 30 cm (3) 40 cm (4) 41 cm