



SRIGAYATRI EDUCATIONAL INSTITUTIONS

ANDHRA PRADESH

CLASS – X

NTSE

Date: _____

Time: 1.30 Hr.

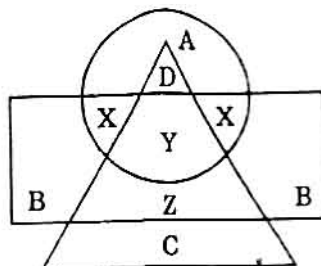
Max. Marks:100

MENTAL ABILITY TEST

Direction (1-10) : Based on coding and decoding :

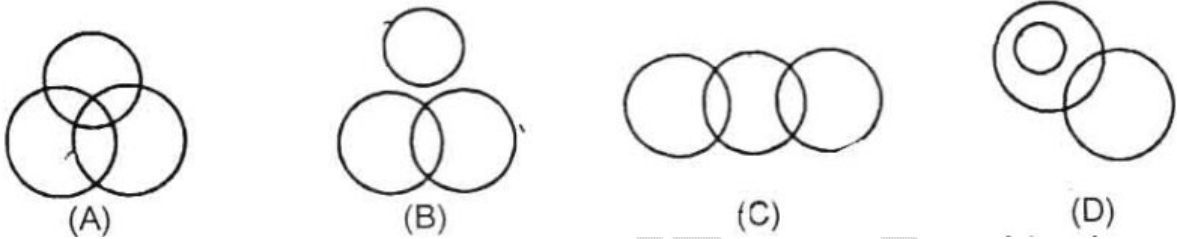
- In a certain code, INACTIVE is written as VITCANIE How is COMPUTER written in the same code.
(A) PMOCRETU (B) ETUPMOCR (C) UTEPMOCR (D) MOCPETUR
- In a certain code, CAT is written as SATC and DEAR is written as SEARD. How would SING be written in that code ?
(A) BFINS (B) SGNIS (C) SINGS (D) GNISS
- In a certain code, STOVE is written as FNBLK, then how will VOTER be written in the same code ?
(A) FLKBN (B) LBNKF (C) LKNBF (D) LNBKE
- If E = 5 and HOTEL = 12, how will you code LAMB ?
(A) 7 (B) 10 (C) 26 (D) 28
- If DICTIONARY is written as 1234256789, then ORDINARY is written as ?
(A) 59126789 (B) 58126789 (C) 57326789 (D) 56126789
- If $7 \times 5 \times 4 = 57354$ and $8 \times 7 \times 3 = 78563$ then $6 \times 8 \times 5 = ?$
(A) 86585 (B) 86855 (C) 68485 (D) 86485
- If in a certain code language UTENSIL is written as WVGPUKN then which word would be coded as DMSFXG ?
(A) BKQEVE (B) BKQDWE (C) BKQDWF (D) BKQDVE
- If in a certain code language SIGHT is coded as FVTUG, then how is REVEAL is coded in that language ?
(A) YNRIRE (B) DQHGMX (C) FSJSOZ (D) ERIRNY
- In a certain TRUTH is coded as SUQSTVSUGI. How is FALSE coded in that language ?
(A) EGZBKMRDE (B) EGZKMRTDF (C) EGZBKMRTDF (D) FGZBKNRTDF
- In a certain code language, CREATIVE is written as BDSBFUJS. How is TRIANGLE written in that code ?
(A) BHSSFKHM (B) BHSSMHHF (C) BSHSFHKM (D) BSSHFMKH

Direction (11 to 17): the following diagram, the circle represents college professors, the triangle stands for surgical specialist and Medical Specialists are represented by the rectangle.



- College Professors who are also Surgical Specialists are represented by
(A) A (B) B (C) C (D) D
- Surgical specialists who are also Medical Specialists but not Professors are represented by
(A) B (B) C (C) X (D) Z

13. **C represents**
 (A) Medical Specialists (B) College Professors
 (C) Surgical Specialists (D) Medical and Surgical Specialists
14. **B represents**
 (A) Professors who are neither Medical nor Surgical Specialists
 (B) Professors who are not Surgical Specialists
 (C) Medical Specialists who are neither Professors nor Surgical Specialists
 (D) Professors who are not Medical Specialists
15. **College Professors who are also Medical Specialists are represented by**
 (A) A (B) X (C) Y (D) Z
16. **Some of the cricket players are tennis players, some tennis players are hockey players, no cricket player is a hockey player.**
Which of the following diagrams correctly represents the about statements ?



17. **Choose the alternative which is closely resembles the water-image of the given combination.**
NUCLEAR



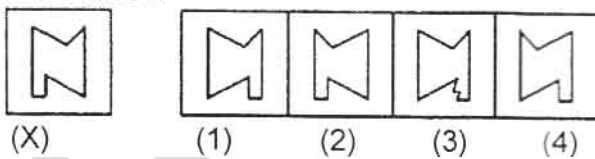
- A) 1 B) 2 C) 3 D) 4

18. **Choose the alternative which is closely resembles the water-image of the given combination**
bridge



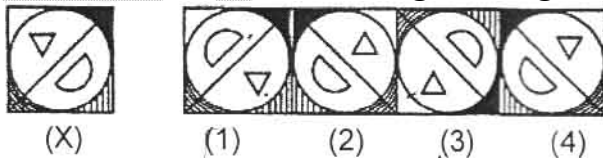
- A) 1 B) 2 C) 3 D) 4

19. **Choose the correct mirror image of the given figure (X) from amongst the four alternatives.**



- A) 1 B) 2 C) 3 D) 4

20. **Choose the correct mirror image of the given figure (X) form amongst the four alternatives.**



- A) 1 B) 2 C) 3 D) 4

MATHEMATICS

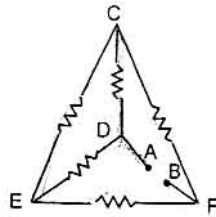
21. **What is the degree of zero polynomial?**
 A) one B) zero C) not define D) two
22. **if $x + \frac{1}{x} = 6$ then $x^2 + \frac{1}{x^2}$**
 A) 32 B) 34 C) 36 D) 38

23. If $x^3 + 3x^2 + 3x + 1$ is divided by $x + \pi$ then the remainder is
 A) $-\pi^3 + 3\pi^2 - 3\pi + 1$ B) $\pi^3 - 3\pi^2 + 3\pi - 1$
 C) $\pi^3 - 3\pi^2 + \pi - 1$ D) None of these
24. The remainder when $1 + x + x^2 + x^3 + \dots + x^{2006}$ is divided by $x - 1$ is
 A) 2005 B) 2006 C) 2007 D) 2008
25. If $ax^4 + bx^3 + cx^2 + dx + e$ is exactly divisible by $x^2 - 1$ then
 A) $a+c+e=0$ B) $b+d=0$ C) $a+b+c+d+e=0$ D) All the above
26. The expression $x^4 - x^3 + x^2 + mx + 4$ is divisible by $x^2 - x - 2$ then $l-m=$
 A) -6 B) 3 C) 5 D) 9
27. A quadratic polynomial in x such that it is divided by $x-1, x-2, x-3$ leaves remainder 1, 2 and 4 respectively is
 A) $\frac{1}{2}x^2 + \frac{1}{2}x + 1$ B) $\frac{-1}{2}x^2 - \frac{1}{2}x + 1$ C) $\frac{3}{4}x^2 - \frac{1}{2}x + 1$ D) $\frac{1}{2}x^2 - \frac{1}{2}x + 1$
28. The remainder when x^{100} is divided by $x^2 - 3x + 2$ is
 A) $(2^{100} - 1)x + (-2^{100} + 2)$ B) $(2^{100} + 1)x + (-2^{100} - 2)$
 C) $(2^{100} - 1)x + (-2^{100} - 2)$ D) None of these
29. Find the remainder obtained when x^{2007} is divisible by $x^2 - 1$
 A) x^2 B) x C) $x+1$ D) $-x$
30. One of the factors of $(x-b)^5 + (b-a)^5$ is
 A) $a - b$ B) $x - b$ C) $x - a$ D) $a + x$
31. If one factor of $(x + 1)^7 + (2x + k)^3$ is $(x + 2)$ then the value of k is
 A) -2 B) 2 C) 4 D) 5
32. If $f(x) = x^3 + ax + b$ is divisible by $(x - 1)^2$, then the remainder obtained when $f(x)$ is divided by $(x + 2)$ is
 A) 1 B) 0 C) 3 D) -1
33. The roots of a quadratic equation $Px^2 + qx + r = 0$ are equal then $q^2 =$ _____
 A) $P + r$ B) $P - r$ C) $4 Pr$ D) Pr
34. If the discriminant of a quadratic equation is negative then the roots are
 A) Imaginary B) Real number C) both (A) and (B) D) None of these
35. If $x^2 - 5x + 4 < 0$ then x lies between
 A) 1 and 2 B) 1 and 3 C) 1 and 4 D) 2 and 4
36. The expression $ax^2 + bxy + ay^2 + b$ is an example of
 A) Homogeneous B) Symmetric C) Homogeneous symmetric D) None of these
37. If $p + q + r = 0$ and roots of the equation $px^2 + qx + r = 0$ are equal, then
 A) $q = p$ B) $q = r$ C) $r = p$ D) $p + q = 1$
38. The inequation for $1 < x < 3$ is
 A) $x^2 - 4x + 3 < 0$ B) $x^2 + 3x - 4 > 0$ C) $x^2 - 3x + 5 > 0$ D) $x^2 + 4x + 3 < 0$
39. The discriminant of $6x^2 - 11x + 3 = 0$ is
 A) 49 B) 94 C) 75 D) 68
40. If $(x - a)(x - b) > 0$ then the value of x doesn't lie between
 A) a and $-b$ B) $-a$ and $-b$ C) a and b D) $-a$ and b

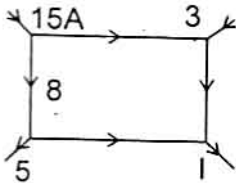
PHYSICS

41. Kirchhoff's second law is based on the law of conservation of
 A) charge B) energy C) momentum D) sum of mass and energy

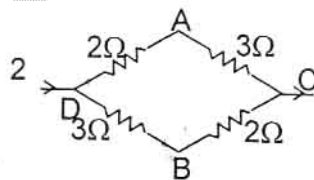
42. A technician has only two resistance coils. By using these singly, in series or in parallel, he is able to obtain the resistance of 3 ohm, 4 ohm, 12 ohm and 16 ohm. Then the resistance of the two coils are
 A) 6 ohm and 10 ohm
 B) 4 ohm and 12 ohm
 C) 7 ohm and 9 ohm
 D) 4 ohm and 16 ohm
43. If R_1 and R_2 are respectively the filament resistances of a 200 watt bulb and a 100 watt bulb designed to operate on the same voltage
 A) R_1 is two times R_2
 B) R_2 is two times R_1
 C) R_2 is four times R_1
 D) R_1 is four times R_2
44. In the adjoining network of resistors, each of resistance R ohm, the equivalent resistance between points A and B is



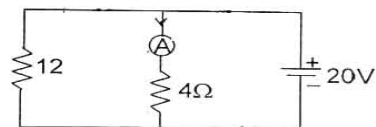
- A) $5R$
 B) $2R/3$
 C) R
 D) $R/2$
45. The resistance of a metallic wire becomes 8 times when
 A) length is doubled
 B) length is tripled
 C) Length is doubled and radius is halved
 D) length is halved and radius is doubled
- 46.



- The value of current I in the given circuit is
 A) 3A
 B) 13A
 C) 23A
 D) -3A
47. A current of 5 amp exists in a 10 ohm resistance for 4 min. How many coulomb pass through any cross section of the resistor in this time ?
 A) 12 Coulombs
 B) 120 coulombs
 C) 1200 coulombs
 D) 12000 coulombs
48. Three 2 ohm resistors are connected to form a triangle. The resistance between any two corners is
 A) 6 ohm
 B) 2 ohm
 C) $(3/4)$ ohm
 D) $(4/3)$ ohm
49. Three 2 ohm resistors are connected to form a triangle. The resistance between any two corners is

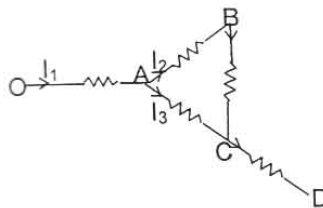


- A) +2
 B) +1
 C) -1
 D) -2
50. In the following figure, the reading of the ammeter A when the internal resistance of the battery is zero, is
 A) $\frac{20}{3}$ amp
 B) $\frac{20}{12}$ amp
 C) $\frac{20}{4}$
 D) $\left(\frac{20}{3} + \frac{20}{12}\right)$ amp



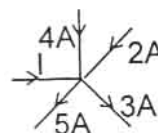
51. The current in the branch CD in the circuit shown ahead will be

- A) $I_1 + I_2$ B) $I_2 + I_3$
 B) $I_2 + I_3$ D) $I_1 - I_2$



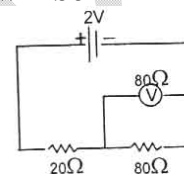
52. In the given current distribution, what is the value of I ?

- A) 3 A B) 8 A
 C) 2 A D) 5 A



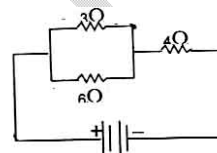
53. In the figure shown below the e.m.f. of the cell is 2V and internal resistance is negligible. The resistance of the voltmeter is 80 ohm. The reading of voltmeter will be

- A) 2.00 volt B) 1.33 volt
 C) 1.0 volt D) 0.80 volt



54. In the following figure, current through 3Ω is 0.8 amp; then the potential drop through 4Ω resistor is

- A) 9.6 V B) 2.6 V
 C) 4.8V D) 1.2 V



CHEMISTRY

55. The dye, tyrian purple is obtained from

- A) indigo leaves B) roots of madder plant C) snails D) hibiscus

56. The auxochrome in Aniline yellow dye is

- A) $N=N$ B) NR_2 C) NH_2 D) $COOH$

57. The solid residue on heating petroleum to $400^\circ C$ is

- A) asbestos B) feldspar C) asphalt D) petroleum jelly

58. Most of drugs acting on nervous system are

- A) natural B) synthetic C) semi synthetic D) cardio vascular

59. For direct release of drug into the small intestine, the drug is modified as

- A) tablet B) syrup C) injection D) capsules

60. In tablet making the binder used is

- A) gum B) lignin C) gelatin D) shellac

61. Acetyl Salicylic acid

- A) aspirin B) paracetamol C) crocin D) calpol

62. The first synthetic dye produce was

- A) indigo B) tukey red C) martiusyellow D) perkin violet

63. Epoxy resins are

- (A) drugs (B) adhesives (C) plastics (D) fibres

64. Ruby red colour is given to glass by adding.

- (A) MnO_2 (B) Cu_2O (C) Cr_2O_3 (D) $AuCl_3$

65. Natural nutrients are

- (A) C,H,O (B) N,P,K (C) Ca,Mg,Na (D) Fe,CU,Zn

66. **Cooking gas does not contain**
 (A) propane (B) butane (C) propene (D) methane
67. **The oxide used in the slurry for glazing earthenware articles is**
 (A) Na_2O (B) Cr_2O_3 (C) PbO (D) ZnO

BIOLOGY

68. **The strength lost by repeated binary fission is regained by**
 (A) Conjugation (B) Budding (C) Sporulation (D) Internal fertilization
69. **The micro nucleus of paramecium controls**
 (A) Respiration (B) Digestion (C) Excretion (D) Reproduction
70. **In megascolex, the testes are present in segments**
 (A) 8,9 (B) 9,10 (C) 10,11 (D) 11,12
71. **In earthworm fertilization occurs in**
 (A) Testes (B) Ovaries (C) Seminal vesicles (D) Cocoon
72. **The function of spermathecae in earthworm is storage of**
 (A) food (B) Ova (C) Spermatozoa (D) Sperm mother cells
73. **When both the male and female sex organs are present in the same animal, the phenomenon is called**
 (A) Sexual dimorphism (B) Hermaphroditism
 (C) Secondary sexual characters (D) Unisexuality
74. **Conjugation is a type of**
 (A) Sexual reproduction in earthworm (B) Sexual reproduction in paramecium
 (C) Vegetative propagation (D) Binary fission
75. **Gonads form**
 (A) sex organs (B) sex hormones (C) gametes (D) both b & c
76. **In man fertilization takes place in**
 (A) ovary (B) vagina (C) fallopian tube (D) uterus
77. **The normal duration of menstrual cycle is**
 (A) one day (B) 14 days (C) 28 days (D) 7-8 days
78. **Arrest of reproductive capacity in woman in the age of 45-55 years is known as**
 (A) Menopause (B) Puberty (C) menarch (D) gestation
79. **Vital connection between mother and foetus is called**
 (A) uterus (B) placenta (C) vagina (D) embryo sac
80. **Which of the following is not an STD**
 (A) AIDS (B) syphilis (C) typhoid (D) gonorrhoea
81. **Which of the following is an IUCD**
 (A) Cu T (B) Diaphragm (C) tubectomy (D) oral pills

SOCIAL

82. **Father Hidalgo and Father Moriloon led the nationalist movement in**
 (A) Brazil (B) Mexico (C) Venezuela (D) Columbia
83. **Brazil was a colony of**
 (A) Portugal (B) Spain (C) Britain (D) France
84. **The five year plans were introduced in Russia by**
 (A) Lenin (B) Gorki (C) Kerensky (D) Stalin
85. **SWAPO headed the nationalist movement in**
 (A) Brazil (B) Mexico (C) Namibia (D) Tanzania
86. **South Rhodesia is now known as**
 (A) Namibia (B) Zambia (C) Tanzania (D) Zimbabwe

87. **Maxmillan was succeeded by**
 (A) Pedro – I (B) Pedro – II (C) Hidaigo (D) Jaurez
88. **The Atlantic Character was signed and issued by**
 (A) Roosevelt (B) Churchill
 (C) Roosevelt and Churchill (D) Roosevelt, Churchill and Stalin
89. **The U.S.S.R. was recognized by the U.S.A in**
 (A) 1924 (B) 1928 (C) 1933 (D) 1934
90. **The second world war came to an end with the surrender of**
 (A) Japan (B) Germany (C) Italy (D) Russia
91. **The Europeans were attracted towards Indonesia because of**
 (A) The Spices (B) The Jute (C) Raw Cotton (D) The Silver
92. **South Africa left the commonwealth in**
 (A) 1961 (B) 1962 (C) 1963 (D) 1964
93. **Simon Boliver initiated liberation struggle in**
 (A) South America (B) North America (C) Europe (D) Africa
94. **Brazil was a colony of**
 (A) Portugal (B) Spain (C) Britain (D) France
95. **Dan Perdo belonged to**
 (A) Mexico (B) Brazil (C) Spain (D) Portugal
96. **Japan entered the Second World War in**
 (A) 1940 (B) 1941 (C) 1943 (D) 1944
97. **The headquarters of the International Court of Justice is**
 (A) The Hague (B) Constantinople (C) Geneva (D) New York
98. **Which of the following countries has a permanent membership in Security Council ?**
 (A) USA (B) India (C) Brazil (D) Germany
99. **After the Second World War the rule of the British ended in**
 (A) Turkey (B) Ethiopia (C) Burma (D) Thailand
100. **Marshall plan was intended to bring about**
 (A) economic reconstruction (B) political reconstruction
 (C) military reconstruction (D) government reconstruction
