Pavzi Media

Telangana Polycet - 2016

English Medium

Model Paper for Math's, Physics and Chemistry

1. The sum of two numbers is 1000and the difference between their squares is 256000.Find the numbers.
   1)630,370   **2) 628,372**
   3)626,374   4)620,380

2. Solve: 141x+93y=189,93x+141y=45
   1)(0,7)   2)(1,-1)
   3)(1,2)   **4)(2,-1)**

3. If the system of equations 2x+3y=7,2ax+(a+b)y=28 has infinitely many   solutions,
   Then
   1)   a=2b   **2) b=2a**
   3)   a+2b   4) 2a+b=0

4. The squares of two consecutive integers differ by 13, then the largest integer is
   1) 12   2) 6   **3) 7**   4) 13

5. If 2x-3/x=5, then x=
   1) 1/2,3   2)-1/2,-3   **3)-1/2,3**   4) ½,-3

6. If ax^2+bx+c is a perfect square, then $b^2=$
   1)4ac   2) ac   3) 2ac   4) √2ac

7. If nth terms of the progressions 63, 65, 67,…………and 3,10,17,……..are same, then   n=
   1)10   2)11   3)12   **4) 13**

8. **If a,b and c are in AP and a>0, then……………. are in GP**

   1)a^a, b^b, c^c 2) a^c, b^a, c^b 3) a^b, b^c, c^a **4)a^a, a^b, a^c**

9. **In a GP, third term is 24 and sixth term is 192, then tenth term is**

   1)3072   2)2456   3)1346   4)3126

10. $\dfrac{1+2+3+\cdots+n}{1+3+5+\cdots+(2n+1)} =$

    1) n+1/2   **2) n+1/2n**   3) n(n+1)   4)none

11. **The equation of the line passing through (0,0) and (a cosα,b sinα) is**

    1) ay= bx tanα   2)by=axtanα   3) by=-ax tanα   4)ay=-bx tanα

12. **The area of the triangle formed by (a,b+c),(b,c+a) and (c,a+b) is**

    1) a+b+c sq units
    2) abc sq units
    3) $(a+b+c)^2$ sq units
    4) 0 sq units

13. **The nearest point from the origin is**

    1) (2,-1)   2)(3,=-1)   3)(5,0)   4) (2,-3)

14. **If the points (a,0),(0,b) and (1,) are collinear, then 1/a+1/b=**

    1)-1   2)2   3)0   **4)1**

15. **The equation of a straight line passing through the points (4,-7) and (1,-5) is**

    1)2x+3y-13=0   2) 2x-3y+13=0
    3) 2x+3y+13=0   4) 2x-3y-13=0

16. **The slope of the line which is parallel to 3x-2y+1=0 is**

    1)-3/2   **2) 3/2**   3) 2/3   4) -2/3

17. **In an equilateral triangle ABC if AD$^\perp$ BC then AD^2=**

    1)$2cd^2$ **2)$3CD^2$**   3) $4CD^2$ 4) $5CD^2$

18. **The areas of two similar triangles are 121cm^2 and 64cm^2 respectively. If the median of the first triangle is 12.1cm, then the corresponding** median of the **other triangle is**

    1)   11cm   2) 8.1cm   3) 11.1cm   **4) 8.8cm**

19. **If in two triangles ABC and DEF, AB/DE=BC/FE=CA/FD, then**

    1) ΔFDE~ΔCAB   2)ΔFDE~ΔBC   **3)ΔBCA~ΔFDE**   4)none

20. If the ratio of parameters of two similar triangles is 9:16,then the ratio of their altitudes is
    1) 16:9   2) 3:4   **3) 9:16**   4) 4:3

21. In a rhombus, the diagonals intersect at
    1) 120°   2)100°   3) 80°   **4) 90°**

22. AB and CD are two common tangents to circles which touch each other at C. If D lies on AB such that CD=4cm, then AB is equal to
    1)4cm   2) 6cm   **3) 8cm**   4) 12cm

23. If tangents PA and PB from a point P to a circle with center O are inclined to each other at angle of 80°, then ∟POA
    1)60°   2) 45°   3) 30°   **4)50°**

24. The angle in a semicircle is
    1) 90°   2) 180°   3) 360°   4) 270°

25. The volume of a cylinder is 49896 cm² and its curved surface area is 4752sq.cm, then its radius is
    1)12.3cm   **2) 21cm**   3)10cm   4) 13.7cm

26. A cylindrical pencil is sharpened to produce a perfect cone at one end with no overall loss of its length.The diameter of the pencil 1cm and the length of the conical portion is 2cm .calculate the volume of the shavings(Take, π =355/113)
    1)0.05cm³   2)1.5cm³   3)0.5cm³   **4) 1.05cm³**

27. If the diagonals of a rhombus are 10cm and 24cm, then the area is
    1) 200cm²   **2)120cm²**   3) 240cm²   4) 20cm²

28. $\cos^4 A - \sin^4 A =$
    1) $\sin^2 A$ 2) $\cos^2 A$ 3)$\tan^2 A$ **4)none**

29. sin 35° cos 35° sin 47° cos 47° cos 90° =
    1) 1   2)-1   **3) 0**   4) sin 45°

30. tan 5° . tan 30° .4tan 85°=
    1) 4√3   **2) 4/√3**   3)1   4) 4

31. If x $\tan\theta$ + y $\sec\theta$ = p and x $\sec\theta$ + y $\tan\theta$ = q, then
    1) $q^2 - p^2 = x^2 + y^2$ 2)$q^2 + p^2 = x^2 - y^2$
    3) $q^2 - p^2 = x^2 - y^2$ 4)$q^2 + p^2 = x^2 + y^2$

32. Two towers heights h1 and h2 subtend angles 60 and 30 respectively, at the mid point of the line joining their feet. Then h1:h2=

1)   1:2   2) 3:1   3) 2:1   4) 1:3

33. Two poles are 'a' meters apart and the height of one is double of the other. If from the middle poiont of the line joining their feet an observer finds the angular elevations of their tops to be complementary, then the height of the smaller pole is

1) $\sqrt{2}am$ **2) a/2 $\sqrt{2}$ m**   3) a/$\sqrt{2}$m   4) 2am

34.   If A and B are supplementary angles , then A+B=

1) 180°   2) 360°   3) 90°   4) 270°

35.   The probability of a certain event is

1) 0   **2) 1**   3) 1/2   4) no existence

36.   A number is selected from the first 50 natural numbers. What is the probability. That it is a multiple of 3?

1)   **8/25**   2) 10/50   3) 12/25   4) none

37.   If three coins are tossed simultaneously, then the probability of getting at Least two heads, is

1) 1/4   **2) 3/8**   3) 1/2   4) none

38.   The probability of guessing the correct answer to a certain test question is. x/12 .If the probability of not guessing the correct answer to this question is   2/3, then x=

1) 2   2) 3   **3) 4**   4) 6

39.   The width of the rectangle in a histogram represents

1) Mid values   2) frequency
3) Number of classes   **4) class interval**

40. Which of the following cannot be determined graphically?

1) Mean   2) median   3) mode   4) none

41. The mean of x and 1/x is M, then the mean of x^3 and $1/x^3$ is

1) M^3 2) M^3+3 **3) M(4M²-3)**   4) ((4M²-3)/2)M

42. From the following distribution, find the number of pupils who scored less   than 40 marks:

Class interval	0-9	10-19	20-29	30-39	40-49	50-59
	6	5	7	9	8	4

1)   18   2) 11   3) 28   **4) 27**

43. From the following table, What is AM?

X	1	2	3	4	………..	n
y	1	2	3	4	………..	n

1) 2n+1 2) 2n+1/2 **3) 2n+1/3** 4) n(n+1)/2

44. **If HCF (26,169)=13, then LCM (26,169)=**
1) 26 2) 52 **3) 338** 4) 13

45. **If $\log_{10} 2 = 0.3010$, then the number of digits in 4^{2013} is**
1) 1211 **2) 1212** 3) 1210 4) none

46. $\sqrt[4]{81} - 8\sqrt[3]{216} + 15\sqrt[4]{32} * \sqrt{32} + \sqrt{225} =$
1) 0 2) -1 3)2 4)7

47. $\frac{\sqrt{1+b}-1}{b} =$
1) $\frac{1}{\sqrt{1-b}-1}$ **2) $\frac{1}{\sqrt{1+b}+1}$** 3) $\frac{1}{\sqrt{b}+1}$ 4) none

48. **If n is a natural number, then 6^n-5^n always ends with**
1) 7 2) 5 3) 3 **4)1**

49. **If n(A)=5, n(B)=5 and n(A∪B)=8, then n(A∩ B)=**
1) 2 2) 3 3) 1 4) none

50. **If A={x/x∈N,I<X<10},then n(A)=**
1)3 2) 4 **3) 8** 4) none

51. **Identify the disjoint sets among the following:**
1) A-B, B-A 2) A-B,A 3) B-A,B 4)none

52. **If two zeros of the polynomial $x^3+3x^2-5x-15$ are √5and -√5then its third zero is**
1)3 2) 5 **3) -3** 4) -5

53. **If α and β are the zeros of the polynomial f(x)=ax+bx+c, then 1/ α +1/β**
1) b/c **2)-b/c** 3)c/b 4) –c/b

54. **If $x=2\frac{2}{3}+2\frac{2}{3}+2$, then the value of $x^3-6x^2+6x=$**
1) 3 2) 1 3) 2 4) -2

55. **If am≠bl, then the system of questions a+by=c,lx+my=n**

1) Has a unique solution
2) Has no solution
3) Has infinitely many solutions
4) Has two solutions

56. The area of the triangle formed by the lines y=x, x=6 and y=0 is
    1) 36 sq.units   2)72 sq.units   3) 9 sq.units   4)18 sq.units

57. Among the following an irrational number is
    1) $\sqrt{16}$ **2) $\sqrt{19}$**   3) $\sqrt{81}$ 4) $\sqrt{144}$

58. 1 is a (an)
    1) Natural number but not a real number
    2) Integer and also an irrational number
    3) Rational number as well as real number
    4) Real number but not a whole number

59. Which of the following is an irrational number?
    1)$\sqrt{12\times3}$ 2) $\sqrt{32} \times 2$ 3) $\sqrt{35} + 14$ **4) $\sqrt{25} + 16$**

60. Among the following, neither a prime nor a composite number is
    1) 0   2) 2   3) 3   **4) 1**

61. Read the following two statements and pick the correct answer:
    a) Light travels in straight line.
    b) Geometric center of a concave mirror is called center of curvature.
    1) Only (a) is true
    2) Only (b) is true
    3) Both (a) and (b) are true
    4) Both (a) and (b) are false

62. Focal length of a lens depends on
    1) Material of the lens   2) radius of curvature
    3) Both (1) and (2)   4) none

63. The angle of refraction of a light ray is the angle between
    1) Incident ray and refracted ray
    2) Refracted ray and interface separating the two media
    3) Normal ray and incident ray
    4) Normal ray and refracted ray

64. The extent of the change in the direction that takes place when a light ray
        travels from one medium to another is given by
    1) Critical angle 2) focal length **3) refractive index** 4) focal power

65. The refractive index of a material is 1. If the speed of light in vaccum is
     3×10^8 m/s then the speed of light in that material is
     1) 0.3×10^8 m/s   **2) 3×10^8 m/s**   3) 4×10^8 m/s   4)10^8m/s

66. In which of the following cases of convex lens, a virtual image is formed?
    1) When the object is placed at the center of the curvature
    2) When the object is placed beyond the center of curvature
    3) When the object is placed between the center of curvature and focal
     Point
      4) When the object is placed between the focal point and optic center

67. An image is formed at a distance of 30cm from the center of convex lens of focal length 15cm.The object distance is
    1) 2cm   2) 15cm   **3) 30cm**   4) 45cm

68. Which part of the human eye contains 'rods' and'cones' to receive the light signals?
    1) Cornea   2) Iris   3) pupil   **4) Retina**

69. For a person with myopia defect, the image of the distant object is formed
     1) Before the retina   2) on the retina
     3) Beyond the retina   4) none

70. For any position of the object in front of the human eye, the image distance
     Is
     1)   25cm   2) 5cm   **3) 2.5cm**   4) 1cm

71. Which among the following colors has the maximum angle of deviation?
    1) Red   2) Blue   3) Green   **4) Violet**

72. A doctor has advised to use 2.5 D lens. The focal length of the lens is
     1) 40cm   2) 250 cm   3) 2.5cm   4) 50cm

73. Read the following two statements and pick the correct answer:
     a) Red color has the shortest wavelength.
     b) Formation of rainbow is an example for dispersion.
     1) Only (a) is true   **2) Only (b) is true**
     3) Both (a) and (b) are true   4) Both (a) and (b) are false

74. Volt per ampere is called
     1) Watt   2) Coloumb   3) farad   **4) ohm**

75 Which among the following quantities has the unit ohm meter?
    1) Resistance   **2) Resistivity**   3) Charge   4) Potential difference

76. Which among the following materials has greater resistivity at room

Temperature

1) Iron   **2) Glass**   3) Gold   4) Germinium

77. **Three resistors each of 6Ω are connected in the form of a triangle. The Resistance across any two corners of the triangle is**
1) 0.25 Ω   2) 6 Ω   **3) 4 Ω**   4) 18 Ω

78. **If V is the voltage, R is the resistance and I is the current, then the equation for electric power is**
1) v^2/R   2) IR^2 3) V^2R 4) V/I

79. **A potential difference of 40v is maintained across a conductor of resistance 20 Ω at constant temperature. The current passing through it is in amperes……**
1) 0.05   2) 80   3) 20   **4) 2**

80. **Which among the following components helps in preventing damages due to overloading?**
1) Capacitor   2) battery   3) generator   **4) electric fuse**

81. **6.023×10^{22} molecules of N_2 at STP with occupy a volume of**
1) 22.4 liters   **2) 2.24 liters**   3) 6.02 liters   4) 14 liters

82. **For the reaction A+ 2B→C, 5 moles of A and 8 moles of B will produce**
1) 5 moles of **c**   **2) 4 moles of c**   3) 8 moles of c   4) 13 moles of c

83. **If a solution turns blue litmus to red, then its PH is likely to be**
1) 5   2) 8   3) 10   4) 12

84. **When Zn is added to aqueous NaOH and on heating it forms**
1) Zno   **2) Na_2ZnO_2**   3) O_2 4) Na_2 o

85. **When an electron jumps from higher orbit to lower orbit in an atom, the energy is**
1) Absorbed   **2) emitted**   3) not changed   4) depends on atom

86. **Magnetic quantum number of the last electron of the sodium is**
1) 3   2) 2   3) 1   **4)0**

87. **Potassium and calcium belong to**
1) s-block elements   2) p-block elements
3) d-block elements   4) f- block elements

88. **Which of the following are lanthanides?**
1) K to Kr   2) Cs to Lu   **3) Ce to Lu**   4) Th to Lr

89. The correct order of atomic sizes of K, Ca, Na, Cl is
    1) K>Ca>Na>Cl   2) K<Ca<Na<Cl
    3) Ca>K>Cl>Na   4) Na> Cl>K>Ca

90. Generally metallic character in period from left to right
    1) Increases   **2) decreases**   3) is equal for all decreases 4) none

91. Generally the chemical bond formed between IA and VIIA group elements
    Is
    1)   Electrovalent bond
    2)   Covalent bond
    3)   Metallic bond
    4)   Dative bond

92. The element with highest electronegative belongs to
    1) 3rd period and 17th group
    2) 2nd period and 17th group
    3) 2nd period and 16th group
    4) 2nd period and 18th group

93. According to VSEPR theory, the shape of molecule with two bond pairs in two covalent bonds around the nucleus of the central atom with two lone pairs in the valence shell is
    1) V shape   2) trigonal planar   3) tetrahedral   4) linear

94. Which one of the following is not a polar molecule?
    1) H_2O 2) HCl   3) NH_3 **4) BF_3**

95. Ionic compounds are soluble in
    1) Non-polar solvents   2) ether   **3) polar solvents**   4) ccl_4

96. The formula of galena is
    1) Zns   2) Mno_2 3) $Caco_3$ **4) Pbs**

97. The impurities present in the ore are called
    1) Gangue   2) slag   3) mineral   4) flux

98. Which one of the following represents calcinations?
    1) $Cao+ Co_2 \rightarrow caco_3$
    2) $2pbs+2o_2 \rightarrow 2pbo+2so_2$
    3) $Pbo+c \rightarrow Pb+ Co$
    4) $Fe_2o_3. 3H_2o \rightarrow Fe_2o_3 + 3H_2o$

99. In electrolysis, the reaction that takes place at cathode is
    1) Oxidation   **2) reduction**   3) redox reaction   4) none

100. The chemical bonds present in C_2H_2 are
    1) 2 signal and 3pi   2) 1 sigma and 2 pi
    3) 3 sigma and 2 pi   4) 2 sigma and 1 pi