ALL INDIA TERII SCHLORSHIP EXAM - 2013

SAMPLE PAPER FOR DIPLOMA LEET

MATHS

1. Roots of the quadratic equation $x^2 +6x-2=0$
   (a) Real
   (b) Complex
   (c) Imaginary
   (d) Not Real

2. Sum up the series 12,15,18,21…….up to 30 terms.
   (a) 1555
   (b) 1670
   (c) 1665
   (d) 1680

3. The number of ways in which a student can choose 5 course out of 9 course. When two courses are compulsory is.
   (a) 35
   (b) 45 x 11
   (c) 25
   (d) 95

4. In the expansion of $(3x+2)^4$,the coefficient of middle term is
   (a) 81
   (b) 54
   (c) 216
   (d) 36

5. The system of equation x+2y=5 and 7x+14y=35 has
   (a) infinitely many solutions
   (b) a unique solutions
   (c) no solutions
   (d) Finite no. of solutions.

6. A matrix is
   (a) collection of real number
   (b) collections of real and complex numbers
   (c) An array of real numbers
   (d) An array of real or complex number
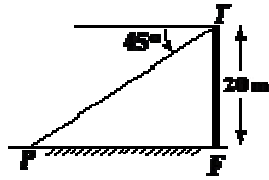
7. The equation $x=at^2$, $y=2at$; represent
   (a) circle
   (b) ellipse
   (c) hyperbola
   (d) parabola

8. If $x=at^2$, $dy/dx=\ldots\ldots$
   (a) 2a
   (b) 2at
   (c) at^3
   (d) 0

9. The value of $\cos20°, \cos40°, \cos60°, \cos80°$ is equal to
   (a) 3/8
   (b) 1/8
   (c) 1/16
   (d) 3/16

10. If $\tan\theta = -4/3$, then $\sin\theta =\ldots\ldots\ldots$
    (a) -4/5 but not 4
    (b) -4/5 or 4/5
    (c) 4/5 but not -4/5
    (d) None of these

11. If the tenth term of a GP is 9 and 4 th term is 4 then its 7 th term is
    (a) 6
    (b) 36
    (c) 4/9
    (d) 9/4

12. If cross product of two non zero vector is zero ,then the vector are
    (a) collinear
    (b) co- directional
    (c) co- initial
    (d) co- terminus

13. Items bought by a trader for $80 are sold for $100. The profit expressed as a percentage of cost price is
    (a) 2.5 %
    (b) 20%
    (c) 25%

(d) 50%

14. Given that a and b are integers, which of the following is **not** necessarily an integer?

(a) 2a-5b
(b) a^7
(c) b^2
(d) ab

15. In the diagram, **not drawn to scale,** TF is a vertical pole standing on horizontal ground PF. The angle of depression of point P from the top of the pole is . What is the
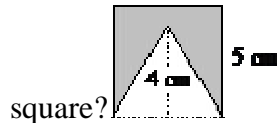

distance PF ?

(a) 10 m
(b) 20 m
(c) 42 m
(d) 90 m

16. Profits in the partnership of Bess, Bill and Bob are shared in the ratio 1 : 2 : 3. If Bill's share of the profits is $300, what is Bob's share?

(a) $150
(b) $450
(c) $600
(d) $ 900

17. The figure, **not drawn to scale**, shows a triangle of height 4 cm cut from a shaded square of sides 5 cm. What is the area, in cm^2 of the remaining shaded region of the

square?

(a) 5
(b) 10
(c) 15
(d) 20

18. Which of the following represents numbers greater than -3 but less than 6 ?
(a) {x: -3 >x >6}

(b) {x: -3 ≥ x ≥ 6}
(c) {x: -3 < x < 6}
(d) {x: -3 ≤ x ≤ 6}

19. A man's regular pay is $3 per hour up to 40 hours. Overtime is twice the payment for regular time. If he was paid $168, how many hours overtime did he work?

(a) 8
(b) 16
(c) 28
(d) 48

20. What is the value of u in the sequence   2 , 7 , 14 , 23 , 34 , u ?
(a) 45
(b) 46
(c) 47
(d) 48

21. The function f(x) = x/2 + 2/x has a local minimum at
(a) x=2
(b) x=-2
(c) x=0
(d) x=1

22. Differentiation of logx.sinx

(a) sinx.1/x
(b) cosx.sinx + logx
(c) sinx.1/x + logx.cos
(d) cosx.(-1/x) + 1/logx

23. y = sinx then evaluate dy/dx = ? then what is Integration of ?

(a) sin x
(b) cos x
(c) –sin x
(d) –cos x

24. An integer is chosen at random from the number ranging from 1 to 50. The probability that the integer chosen is a multiple of 2 or 3 or 10 is

(a) 3/10
(b) 7/10
(c) 18/25
(d) 9/10

25. Which of the following is a subset of $\{b, c, d\}$?

    (a) { }
    (b) {a}
    (c) {1,2,3}
    (d) {a,b,c}

26. $3x - 4(x + 6) =$

    (a) x+6
    (b) -x-24
    (c) 7x+6
    (d) -7x-24

27. 3 4/5 expressed as a decimal is

    (a) 3.40
    (b) 3.45
    (c) 3.50
    (d) 3.80

28. Which of the following is the Highest Common Factor of 18, 24 and 36?

    (a) 6
    (b) 18
    (c) 36
    (d) 72

29. The bases and heights of a cylinder and a cone are the same. The volume of the cylinder is $V \text{ cm}^3$. What is the volume of the cone in cm^3?

    (a) 1/4 V
    (b) 1/3 V
    (c) 1/2 V
    (d) V

30. The average of a set of numbers reduces from 14 to 11 when the number 35 is removed. How many numbers were in the original set?

    (a) 8
    (b) 11

(a) 21
(b) 25

SCIENCE

31. Poise is the unit of
(a) Surface Tension
(b) Viscosity
(c) Elasticity
(d) Terminal Velocity

32. A device used for converting alternating current into direct current is
(a) Inverter
(b) Transformer
(c) Pacifier
(d) None of these

33. Sound waves cannot propagate through
(a) Glass
(b) Air
(c) Vacuum
(d) Iron

34. Sun light reaches the Earth by the process of
(a) Conduction
(b) Convection
(c) Radiation
(d) Conduction, Convection and Radiation

35. Mercury becomes super conductor at
(a) Very high temperature
(b) 0° C
(c) Very low temperature
(d) 47.5^o C

36. When the length of a wire is doubled, the specific resistance of the material of the wire
(a) Becomes half
(b) Gets doubled
(c) Remains unchanged
(d) None of these

37. Electricity charge can be stored in a
(a) Battery

(b) Capacity
(c) Inductor
(d) Dynomo

38. S.I. unit of work is
(a) dyne
(b) erg
(c) newton
(d) Joul

39. Optical fibres are based on
(a) Reflection of light
(b) Polarization
(c) Total internal reflection
(d) Refraction

40. Height of Geostationary satellite above earth is approximately
(a) 1000 km
(b) 36000km
(c) 42000km
(d) 18000km

41. Acceleration due to gravity is maximum at
(a) Poles
(b) Equator
(c) Sea Level
(d) Mount Everest

42. Planetary motion is governed by …… law of planetary motion
(a) Newton's
(b) Copernicus
(c) Kepler
(d) Galileo

43 . Stress is proportional to strain within elastic limit. It is the statement of
(a) Ohms law
(b) Pascal's law
(c) Hook law
(d) Newton's law

44. Light year is the unit of
(a) time

(b) distance
(c) acceleration
(d) velocity

45. Which of the following is not a vector quantity
  (a) acceleration
  (b) kinetic energy
  (c) velocity
  (d) momentum

46. The ratio of specific heat of gas at constant pressure to specific heat of gas at constant volume is

  (a) less than 1
  (b) 1
  (c) greater than 1
  (d) zero

47. Purest form of iron is
  (a) cast iron
  (b) wrought iron
  (c) steel
  (d) none of these

48. The nuclear reaction

  $_1H^2 + {}_1H^2 = {}_2He^4$ is called a

  (a) Chain reaction
  (b) fission reaction
  (c) fusion reaction
  (d) critical reaction

49. Artificial radio active was discovered by

  (a) rontegen
  (b) Becquerel
  (c) Marie curie
  (d) Irone joliot curie

50. Formation of chemica bond is associated with
  (a) decrease in potential energy
  (b) increase in potential energy

(c) no change in potential energy

(d) potential energy first increases then decreases.

51. In free vibrations, the frequency of a body is called:

(a) Free frequency

(b) Natural frequency

(c) Resonant frequency

(d) Own frequency

52. Carbon atoms in diamond are bound together by means of

(a) carbon bond

(b) lonic bond

(c) co-valent bond

(d) hydrogen bond

53. Fixation of nitrogen means

(a) manufacture of nitrogen

(b) liqnefication of nitrogen

(c) conversion of nitrogen into nitric acid

(d) conversion of atmospheric nitrogen into useful compounds.

54. Which of the following is used as a fuel?

(a) CO_2

(b) CH_3OH

(c) CH_4

(d) CH_2COOH

55. Which of the following is used as a solid lubricant?

(a) carbon

(b) graphite

(c) borex

(d) greases

56. Which of the following is not a chemical compound?

(a) water

(b) air

(c) acetic acid

(d) sulphur dioxide

57. The instrument used to see distant objects more clearly is called:
   (a) Prism
   (b) Telescope
   (c) Microscope
   (d) Camera

58. Power of lens is measured in:
   (a) Centimeter
   (b) Watt
   (c) Dioptre
   (d) Meter

59. A telescope forming image at infinity, is said to be in ……………………… mode.
   (a) Normal adjustment
   (b) Real adjustment
   (c) Virtual adjustment
   (d) None of them

60. Change of path of light when entering from one medium to other, is called:
   (a) Diffraction
   (b) Refraction
   (c) Reflection
   (d) Total internal reflection

ENGLISH

Of four alternatives given under each sentences, find one that fits best in blank space

61. I hate sitting …………. him as he always smells of garlic.
   (a) besides
   (b) among
   (c) at
   (d) beside

62. His conduct is bad, and his honesty is not………. Suspicion
   (a) above
   (b) beyond
   (c) under
   (d) in

63. He is a very careful person, he never take sides but remains
   (a) impartial
   (b) unbiased
   (c) neutral
   (d) prejudiced

64. …………..of any kind is demoralizing.
        (a) addiction
        (b) habit
        (c) custom
        (d) tradition

65. The sun is shining brightly, please ……… the light
        (a) put off
        (b) put out
        (c) take off
        (d) put on

66. Bhave , an eminent scientist died……………. An accident
        (a) of
        (b) from
        (c) with
        (d) in

67. The car broke……….. suddenly
        (a) of
        (b) off
        (c) down
        (d) out

68. The government is seized……….. this problem
        (a) with
        (b) in
        (c) of
        (d) from

69. …………..the rain stopped, the play has to be suspended
        (a) while
        (b) until
        (c) when
        (d) since

70. The general said that the position must be ……….at all cost
        (a) arrested
        (b) caught
        (c) captured
        (d) possessed

71. choose the word opposite in meaning to 'Density'
        (a) rarity
        (b) clarity
        (c) bright
        (d) none

72. The word opposite in meaning to 'patchy' is
        (a) attractive
        (b) simple
        (c) uniform
        (d) clear

73. Substitute the underlined phrase by a suitable word from among given choices
      Every body has a special fascination for his alma matter
     (a) Mother
     (b) old lady
     (c) the institution where he has been educated
     (d) his wife

74. Give the word which is opposite in meaning to 'Nefarious'

            (a) virtuous
            (b) Immoral
            (c) pious
            (d) clandestine

75. Give the word which is similar in meaning to 'Logo'
        (a) style
        (b) trademark
        (c) design
        (d) logic

76. -77 Find out the most appropriate word that can replace the underlined word in the following sentence

76. The pavement hawker assured the authorities that he had no intention to occupy the footpath.
        (a) Intrude
        (b) encroach upon
        (c) obstruct
        (d) take over

77. The bus has to go back and forth every six hours
        (a) travel

(b) run
(c) commute
(d) shuttle

78. Choose the word which is opposite in meaning to '**Mortal**'
        (a) divine
        (b) spiritual
        (c) immortal
        (d) eternal

79. Find the word which is not correctly spelt
        (a) logical
        (b) lovely
        (c) Elicit
        (d) lonesome

80. Fill in the blanks with the most appropriate word.
        Man does not live by ……….. alone.
        (a) Food
        (b) meals
        (c) bread
        (d) diet

81. A notice is
        (a) Short form of communication
        (b) Written form of communication
        (c) Formal communication
        (d) All the above

82. Notices are written to
        (a) Make appeal
        (b) Give invitations
        (c) Announce events
        (d) All the above

83. The format of a notice DOES NOT include
        (a) Name and designation of the issuing authority.
        (b) Complete address of the issuing authority.
        (c) Bio data of the sender
        (d) Both B and C

84. The word notice is written at the
        (a) Top left
        (b) Top right
        (c) Top center

(d) Bottom

85. A notice should not exceed
  (a) 20 words
  (b) 30 words
  (c) 40 words
  (d) 50 words

Read the passage carefully and answer the questions that follow:
  Socialism aims , then , at substituting the motive of social service for the motive of private profit. It holds that men will do better work to make the good life, with the leisure and financial competence it requires, possible for a society which in the long ruins themselves, than they will at present consent to do for a society which compels them to enrich the exploiters of their labor in order to avoid starvation for themselves. If socialism is wrong in making this assumption if the psychology of human beings is such that they will not work willingly and well for society but only for themselves, then the whole of the socialist edifice falls to the ground. For this doctrine is the foundation upon which it rests. Fighter men are socially minded in the sense descried or they are not and cannot be made so.

86. The objective of socialism is to encourage
 (a) private investment
 (b) equal society
 (c) profit making
(d) job reservation

87. Men are expected to work better in a socialist set-up because
(a) they are tempted to earn more money
(b) they constitute the society themselves
(c) they are not allowed a life of leisure
(d) they do not enquire exceptional competence

88. In this paragraph , the author is
(a) trying to define socialism
(b) pointing out the inadequacies of socialism
(c) establishing a link between socialism and starvation
(d) Lamenting that man has no social commitment.

89. The socialist structure is likely to collapse unless it
(a) is built upon solid foundation
(b) stops making assumptions
(c) ensures productivity through social awareness

(d)reserves jobs for backward classes

90. Societies normally
(a) overlook the rich man's labor
(b) treat rich and poor alike
(c) use force to obtain work
(d) starve man to make a few rich

GENERAL KNOWLEDGE

91. Rajiv Gandhi Education city is being established in the state of
(a) Rajasthan
(b) Punjab
(c) Haryana
(d) Uttar Pradesh

92. General elections 2009 for the 14th parliament of India were held in ……… stages
(a) 1
(b) 3
(c) 4
(d) 2

93. Who among the following is the president of India?
(a) Sonia Gandhi
(b) Pratibha patil
(c) Pranab Mukherjee
(d) Mayawati

94. Palwal is the………. District of Haryana.
(a) 20th
(b) 19th
(c) 21th
(d) 22th

95. Abhinav Bindra who won Gold medal in Baizing Olympics is associated with
(a) Hockey
(b) Boxing
(c) shooting
(d) weight lifting

96. What is the capital of Haryana?
(a) Panchkula
(b) Hisar
(c) Rohtak
(d) Chandigarh

97. Bijender Singh who won bronze medal in 2008 olympics is belongs to
 (a) Hisar
 (b) Panchkula
 (c) Bhiwani
 (d) Gurgaon

98. Who among the following is known as an Iron man of India
 (a) Bansilal
 (b) Sardar Patel
 (c) Jawaharlal Nehru
 (d) Mahatma Gandhi

99. Huen Tsang stayed in Thaneswar during period 635 to 644AD .
   who was its ruler at that time?
  (a) Akbar
  (b) Pushya Mitra
  (c) Pulk Sen
  (d) Harshvardhan

100. What is the minimum age for a candidate to became Prime – Minister of India?
   (a) 35
   (b) 25
   (c) 40
   (d) 60

101. Who among the following is famous by the name as 'Lady of the lamp'?
   (a) Florence Nightingale
   (b) Ani Besant
   (c) Mother Terasa
   (d) Sister Nivedita

102. Who among the following is the first Indian woman to become Miss Universe?
   (a) Aditi pal
   (b) Sania Mirza
   (c) Sushmita Sen
   (d) Dia Mirza

103. Next census of India will be carried out in
   (a) 2010
   (b) 2021
   (c) 2015
   (d) 2008

104. Which among the following is the national game of India?
(a) cricket
(b) wrestling
(c) Hockey
(d) Tennis

105. A member of Rajya Sabha is elected for…………….
(a) 5 years
(b) 6 years
(c) 3 years
(d) 4 years

106. As water is related to ocean , in the same way sand is to
(a) desert
(b) island
(c) land
(d) hills

107. Hunger : Food : Thirst : ………..
(a) juice
(b) drink
(c) tea
(d) water

108. Complete the series
A, Z, B, Y, C, …….?...
(a) D
(b) X
(c) U
(d) M

109. Find out the odd one
(a) Friend
(b) Father
(c) Mother
(d) Brother

110. Complete the series
3, 10, 20, 33, 49, 68, ………

111. Arun travelled 3 km southwards, then turned right and travelled 5 Km. again he turned right and travelled 7km. in which direction he is travelling at the end of his journey

(a) East
(b) West
(c) North
(d) South

112. Which one is different from the rest three?
   (a) Beauty
   (b) Cuteness
   (c) Looks
   (d) Character

113. In certain language , SPACE is coded as TBDF, how is PURSE coded in that code
   (a) TSRF
   (b) OVQT
   (c) QVSTF
   (d) ESRUP

114. Amit said " this girl is the wife of the grandson of my mother'. Who is Amit to that girl?
   (a) Father
   (b) Grand father
   (c) Father in law
   (d) Husband

115. Driving is related to bus in the same way as flying is related to
   (a) Bird
   (b) Air
   (c) kite
   (d) Aeroplane

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