ADAT - 2017

(Aditya Degree Admission Test, a compulsory exam for admission into 3 years degree course)

ADITYA DEGREE COLLEGES

KAKINADA :: RAJAHMUNDRY :: VISAKHAPATNAM :: PALAKOL

Time : 3hrs   **Max Marks :100**

<u>Instructions:</u> 1. There will be 5 Sections- Mathematics, Economics, Civics, Aptitude & Softskills.

            2. Each section consists of 20 bits & each bit carries 1 Mark.

            3. Each wrong answer entails 1/4 negative marking.

SECTION - A (MATHEMATICS)

1. $f(x+y) = f(x) \cdot f(y)$ for all x and y. $f(1) = 2$ the area enclosed by $3|x| + 2|y| \leq 8$ is

     1. f(5) sq.units   2. f(6) sq.units   3. $\dfrac{1}{3}$ f(6) sq.units   4. f(4) sq.units

2. If p is the length of the perpendicular from the origin on the line $\dfrac{x}{a} + \dfrac{y}{b} = 1$ and a^2, p^2, b^2 are in A.P. Then $a^4 - 2p^2$

     $a^2 + 2p^4 = \underline{\quad}$

     1. -1   2. 0   3. 1   4. 2

3. If θ is angle between diagonal of a cube and diagonal of a face of a cube then $\cos^2 \theta =$

     1. $\dfrac{1}{2}$ 2. 0   3. $\dfrac{1}{3}$ 4. $\dfrac{2}{3}$

4. $\underset{x \to 0}{\text{Lim}}$

     1. $\dfrac{3}{32}$ 2. $\dfrac{9}{32}$ 3. $\dfrac{3}{2}$ 4. $\dfrac{7}{32}$

5. If $y = \dfrac{1}{x} - \dfrac{1}{x^2} + \dfrac{1}{x^3} - \dfrac{1}{x^4} + \ldots\ldots (x > 1)$ Then $\dfrac{dy}{dx} =$

     1. $\dfrac{1}{1+x}$ 2. $\dfrac{-1}{1+x^2}$ 3. $\dfrac{-1}{(1+x)^2}$ 4. $1 - \dfrac{1}{2x} + \dfrac{1}{3x^2} + \ldots.$

6. Equation of the rectangular hyperbola whose asymptotes are coordinate axes is

     1. $x^2 - y^2 = a^2$ 2. $x^{2/3} - y^{2/3} = a^{2/3}$ 3. $xy = c^2$ 4. $y^2 = ax^2$

7. $\displaystyle\int_{0}^{2\pi} \left[|\sin x| + |\cos x| \right] dx =$

     1. 0   2. 4   3. 8   4. 1

8. The focus of the parabola $y^2 - x - 2y + 2 = 0$

     1. $\left(\dfrac{1}{4}, 1\right)$ 2. $\left(\dfrac{5}{4}, 1\right)$ 3. $\left(1, \dfrac{5}{4}\right)$ 4. $\left(\dfrac{5}{4}, 0\right)$

9. Distance between directrices of the ellipse $\dfrac{x^2}{36} + \dfrac{y^2}{20} = 1$ is

     1. 28   2. 18   3. 56   4. 16

10. The centre of the circle which cuts orthogonally each of the three circles
     $x^2 + y^2 + 2x + 17y + 4 = 0$, $x^2 + y^2 + 7x + 6y + 11 = 0$ and $x^2 + y^2 - x + 22y + 3 = 0$ is

1. (3,2)   2. (1,2)   3. (2,3)   4. (0,2)

11. If a and b are unit vectors and θ is the angle between them, then a - b will be a unit vector if $\theta =$

1. $\dfrac{\pi}{4}$ 2. $\pi/3$ 3. $\pi/6$ 4. $\pi/2$

12. Period of the function |sinx| + |cosx|

1. $\dfrac{\pi}{2}$ 2. π 3. 2π 4. $\dfrac{3\pi}{2}$

13. The value of Sin 21^0 cos 9^0 - cos 84^0 cos 6^0 is

1. $\dfrac{1}{2}$ 2. 0   3. 1   4. $\dfrac{1}{4}$

14. Value of $\sin^{-1}\dfrac{4}{5}$ $+2\tan^{-1}\dfrac{1}{3}$ =

1. $\pi/3$ 2. π 3. $\dfrac{\pi}{2}$ 4. 2π

15. If a = 4, b = 5, c = 7 then $\cos\dfrac{B}{2}$ =

1. $\dfrac{6}{7}$ 2. $\sqrt{\dfrac{6}{7}}$ 3. $\sqrt{\dfrac{7}{6}}$ 4. $\dfrac{7}{6}$

16. The sum of the First 10 Terms in the expansion $(1-x)^{-3}$ is
1. 220   2. 286   3. 120   4. 150

17. $\sqrt{42 + \sqrt{42 + \sqrt{42 + ...}}}$ =

1. -6   2. 5   3. $\sqrt{43}$ 4. 7

18. The number of different signals can be given by using only numbers of flags from 4 flags of different colours is
1. 24   2. 256   3. 64   4. 60

19. The probability that leap year will have 53 sundays is

1. $\dfrac{1}{7}$ 2. $\dfrac{2}{7}$ 3. $\dfrac{3}{7}$ 4. $\dfrac{4}{7}$

20. If α is root of f(x) = 0 then α^2 is root of

1. f(x) = 0   2. f(x+1) = 0   3. f($\sqrt{x}$) = 0   4. f(x^2) = 0

SECTION - B (ECONOMICS)

21. Classical economists defined economics as
1. The science of wealth   2. The science of welfare
3. The science of scarcity   4. The science of growth and development
22. Marshall's book "Principles of Economics" was published in the year
1. 1871   2. 1885   3. 1890   4. 1894
23. Which of the following pairs are the example of complementaries
1. Tea and Coffee   2. Pepsi and Thums-up   3. Pen and Ink   4. Chicken and Mutton
24. Demand for a commodity depends upon several factors known as:
1. Elasticity of demand   2. Supply function
3. Cross demand   4. Determinants of demand
25. India is a best example of:
1. Developed economy   2. Developing economy
3. Least developed economy   4.None of these

26. The New Industrial Policy Resolution was announced in the year
1. 1948   2. 1956   3. 1991   4. 2001

27. Poverty in India is mostly
1. Absolute Poverty   2. Relative Poverty   3. Mixed Poverty   4. All of the above

28. Human Development Index (HDI) was developed by
1. UNO   2. UNDP   3. WTO   4. IMF

29. Sector, which includes trade, transport, banking, communications etc, is known as:
1. Primary Sector   2. Secondary Sector   3. Tertiary Sector   4. Organised Sector

30. NABARD has been set up in the year:
1. 1980   2. 1982   3. 1984   4. 1986

31. In 2011-12, around _____ % of the working population was engaged in primary sector
1. 65   2. 54   3. 49   4. 34

32. Eleventh Five year plan acheived the average growth rate around
1. 6%   2. 7%   3. 8%   4. 9%

33. The resources which can be used permanantly without depletion are called
1. Renewable resources   2. Non-Renewable resources
3. Natural resources   4. Un-Natural resources

34. Most of Unemployment in India is _____ in nature
1. Structural   2. Cyclical   3. Firictional   4. Voluntary

35. Giffen paradox means _____ demand curve
1. Negative   2. Postive   3. Horizontal   4. Vertical

36. In the case of an inferior commodity the income elasticity of demand is:
1. Positive   2. Negative   3. Zero   4. None of these

37. Indifference curve analysis was developed by:
1. Marshall and Pigou   2. Adam smith and Robbins
3. J.R. Hicks and RGD Allen   4. Robbins and Samuelson

38. In the case of law of variable proportions, only _____ factors remain constant
1. Fixed   2. Variable   3. Normal   4. None of these

39. Monopoly is a market form where
1. There is a single seller   2. There are two sellers
3. There are few sellers   4. None of these

40. The opportunity cost of a factor of production is _____
1. What is earning in the present use   2. What it can earn in the long-run
3. What it can earn in the next best alternative use   4. None of these

SECTION - C (CIVICS)

41. 'Politics is derived form'
1. Greek word   2. English word   3. Latin word   4. Above all

42. Jus sanguinis means
1. Kinship   2. Blood relation   3. Place of birth   4. a & b

43. Fundamental rights are borrowed from
1. USA   2. UK   3. Irland   4. Canada

44. When was the constitution of India adopted by the constituent assembly
1. 25th Nov 1949   2. 29th Nov 1949   3. 26th Nov 1949   4. 27th Nov 1949

45. The first election commissioner of India was
1. Dr. Nagendra Singh   2. S.P. Sen Varma   3. Sukumar sen   4. K.V.K.Sundaram

46. The Judge of the Supreme Court of India now retire at the age of
1. 62 years   2. 60 years   3. 65 years   4. 58 years

47. National Development Council was constituted on
1. Aug 16, 1950   2. April 1, 1951   3. Aug 6, 1952   4. Aug 16, 1952

48. Which constitutional article defines the Panchayat Raj?
    1. 2430   2. 243A   3. 243   4. 2431
49. Which one of the following is not a fundamental right
    1. Right against exploitation   2. Right to constitutional remedis
    3. Right to property   4. Cultural and Educational rights
50. First women judge to be appointed to Supreme Court ?
    1. Rani Jethmalani   2. Anna George   3. M. Fathima beevi   4. Leib seth
51. Who is the Supreme commander of the armed force in India?
    1. P.M   2. The commander-in-chief   3. The President of India   4. Minister of Defence
53. What is the minimum age laid down for a candidate to seek election to the Lok Sabha?
    1. 18 years   2. 21 years   3. 25 years   4. 30 years
54. Who is known as the first Law Officer of India?
    1. Chief Justice of India   2. Law Minister of India
    3. Attorney General of India   4. Law Secretary
55. The constituent assembly was set up in
    1. 1945   2. 1946   3. 1947   4. 1949
56. Which of the following is not a condition on for becoming a citizen of India
    1. Birth   2. Acquiring property   3. Descent   4. Naturalisation
57. A money bill in the Parliament can be introduced only with the recommendations of the
    1. President of India   2. Union Cabinet
    3. Speaker of the Loksabha   4. Union Finance Minister
58. PIO _____
    1. Postal India Order   2. Process in Order
    3. Public Information Officer   4. Public Interest Opinion
59. Constitution of India came into effect from?
    1. 15th Jan 1950   2. 26th Jan 1950   3. 15th Aug 1950   4. 15th Jan 1950
60. Right to information Act enacted in
    1. 2005   2. 2004   3. 2006   4. 2003

SECTION - D (APTITUDE)

61. In a code FLAUNT is written as DNYWLV, then how will WAGONG be written
    1. UYEMLQ   2. YCLQPU   3. CYEPQU   4. UCEQLI
62. BDFH : JNLP :: CEGI :-
    1. HIJK   2. EGJL   3. KMOQ   4. KLPQ
63. Which one does not belong to the same group
    1. Tomato   2.Turmeric   3. Potato   4. Carrot
64. Which one does not belong to the same group
    1. 31   2. 41   3. 81   4. 71
65. Complete the series DF,GJ,KM,NQ,RT,_____
    1. UW   2. UX   3. YZ   4. XZ
66. A is the brother of B. C is the mother of B. M is the sister of C. How is M related to B.
    1. Nephew   2. Niece   3. Uncle   4. Aunt
67. If P means X, R means÷ M means -, and W means + them find the value of 20R 5
    W12 M3 P4
    1. 4   2. 16   3. 28   4. 52
68. Amar walked 30 meters toward south, turned left and walked 50 meters, again he
    turned left and walked 30 meters. How far is he from the starting point.
    1. 80 meters   2. 100 meters   3. 50 meters   4. 130meters
69. Which of the following does not belong to the same group
    1. Blue   2. Red   3. Violet   4. Grey
70. BELOW is related to OBWEL in the same way as DRAFT is related to _____
    1. ARTDF   2. FDART   3. DFTRA   4. FDTRA

71. A car covers a distance of 576 kms in 12 hours what is the speed of the car.
    1. 54kmph   2. 62 kmph   3.46 kmph   4. 46 kmph
72. There are 1825 employees in an organization out of which 64% are transferred to different places. How many employees are transferred
    1. 1054   2. 1168   3. 1490   4. 1263
73. Find the average of 354,281,623,518
    1. 444   2. 454   3. 446   4. 464
74. A canteen requires 28 kgs of sugar for one week. How many kgs of sugar is required for the months of March and April.
    1. 248kgs   2. 274 kgs   3. 244 kgs   4. 232 kgs
75. In an examination Jyothi scored a total of 520 marks out of 800. What is the percentage she got
    1. 55   2. 65   3.75   4. 69
76. 15 men can complete a work in 4 days. In how many days will 20women complete the same work.
    1. 2   2. 4   3. 5   4. 3
77. 46% of a member is 1426. What is the number
    1. 3100   2. 2550   3. 3475   4. 4200
78. A shop keeper buys 5 bangles for Rs. 8880 and later sell them for Rs 9875. How much profit he makes for one bangle.
    1. Rs 205   2. Rs 199   3. Rs 213   4. Rs 191
79. What least number isto be added to 8888 to make it a perfect square.
    1. 137   2. 52   3. 112   4. 90
80. The average of 4 consecutive even numbers A,B,C and D is 45. What is the product of A and C.
    1. 2025   2. 1848   3. 1932   4. 2016

SECTION - E (SOFT SKILLS)

Directions: Read the following passage carefully, identify the correct answer to each of the following questions and mark the corresponding letter as your answer.

Crude mineral oil comes out of the earth as a thick brown or black liquid with a strong smell. It is a complex mixture of many different substances, each with its own individual qualities. Most of them are combinations of hydrogen and carbon in varying proportions. Such hydrocarbons are also found in other forms such as bitumen, asphalt and natural gas. Mineral oil originates from the carcasses of tiny animals and from plants that live in the sea. Over millions of years, these dead creatures form large deposits under sea-bed and ocean currents cover them with a blanket of sand and slit. As this material hardens, it becomes sedimentary rock and effectively shuts out the oxygen, so preventing the complete decomposition of the marine deposits underneath. The layers of sedimentary rock become thicker and heavier. Their pressure produces heat, which transforms the tiny carcasses into crude oil in a process that is still going today.

81. Marine deposits under the sea do not get decomposed because they:
    1. Become rock and prevent oxygen from entering them
    2. Are covered by the sand and slit brought by the current
    3. Contain a mixture of hydrogen and carbon
    4. Are constantly washed by the ocean current
82. Sedimentary rock leads to the formation of oil deposits because :
    1. It becomes hard and forms into rocks which produce oil.
    2. Its pressure produces heat and turns the deposits of animal carcasses and plants into oil
    3. It turns heavy and shuts out the oxygen
    4. It becomes heavy and hard, and applies pressure to squeeze oil
83. In order to heavy mineral oil, hydrogen and carbon are combined in:
    1.Equal proportions   2.Fixed proportions   3.Varying proportions   4.The proportion of two and one

84. The time it takes for the marine deposits to harden into rock is :
    1. A few years   2. Thousands of years   3. Hundreds of years   4. Millions of years

FILL IN THE BLANKS

Directions: choose the appropriate word to fill in each of the following blanks and mark the corresponding letter as your answer.

Articles:

85. He went to………….college to meet………….class teacher.
    1. a ,an   2. an,the   3. the,the   4. a & no article

86. ………….European woman came to America.
    1. a   2. an   3. the   4. no article

Prepositions:

87. In General, acids act ……………………… Metals
    1. on   2. in   3. by   4. with

88. He fell the tree …………………… an axe
    1. On   2. in   3. by   4. with

Conjunctions:

89. A student will fail ………………… he does not work hard
    1. Because   2. if   3. until   4. though

90. He was late ……………………. It was raining heavily
    1. While   2. after   3. when   4. because

Tenses:

91. He always ………………. To prove that the earth revolves round the sun
    1. Tried   2. Tries   3. was trying   4. is trying

92. I was watching TV when she ……………………. In
    1. Comes   2. Came   3. come   4. was coming

Correction of sentences

Directions: Identify the part containing the error in each of the following sentences and mark the corresponding letter as your answer.

93. Her and the (1) other members of the group (2) spoke to the person (3) after their final victory (4)

94. When she comes   (1) to see us   (2) she usually will bring (3) something with her (4)

95. . I did not want   (1) him to have spent   (2) all the money at   (3) the fair yesterday

96. . He picked up   (1) the books   (2) and put it   (3) on the table (4)

Vocabulary:

Directions:

Choose the correct synonym to each of the following words. and the mark the corresponding letter as your answer.

97. absurd
    1. Ridiculous   2. correct   3. clear   4. wise

98. Bewilder
    1. happier   2. Perplex   3. rational   4. gently

Directions:

Choose the correct Antonym to each of the following words and the mark the corresponding letter as your answer.

99. Renounce
    1. Denounce   2. Allow   3. Follow   4. Permit

100. Boon
    1. Bless   2. Bane   3. Gift   4. Accept

* * * * *