NIMCET 2017 Original Paper

SECTION-A (ENGLISH)

Directions :Read the following passage and answer the question 1 to 5

Anthropologists have placed together the little they known about the history of left - handedness and right - hand handedness from indirect evidence .Though early men and women did not leave written record, they did leave tool bones and picture . Stone Age hand axes and hatches made from stone that were carefully chipped away made to from sharp cutting edges. In some , the pattern of chipping shows that these tools and weapons were made by right handed people,designed to fit comfortably into a right hand .Other Stone Age implement were made by or for left hander,Perhistoric pictures, painted on walls of caves, provider further clues to the handedness of ancient people. A right - hander finds it easier to draw faces of people and animals facing towards the left wherea s a left - hander finds it easier to draw faces towards the right .Both kind of face have been found in ancient painting.On the whole , the evidence seems to indicate that prehistoric people were either ambidextrous or about equally likely to be left or right handed. But in the Bronze Age.The picture changed The tool and wepon found from that Period are mostly made for right handed use .The predominance of right - handedness among humans today and apparently already been established.

1. What is the indirect evidence through which the preferred handedness of the Stone Age people could be understood ?

(a) Pertified froms of vegetation
(b) Patterns of stone chipping
(c) Fossilized waste material
(d) Fossilized foot prints

2. According to the passage , a person who is right - handed is more likely to draw people and animals that are facing

(a) Upwards (b) Downwards
(c) Towards the right (d) Towards the left

3. What does the wors “picture” mentioned with refrence to Bronze Age mean

(a) Face of Animals and people
(b) People’s view from in side the cave
(c) People’s tendency to work with either hand
(d) The kinds of paint used on cave walls

4. Which of the following development occored around the time of Bronze Age ?

(a) The establishment written records
(b) A change in the styles of cave painting
(c) A increse in human skill in the handling of tools
(d) The prevalence of right handedness

5. What is the main idea conveyed through the passage ?

(a) The picture of ancient implements
(b) The significance of prehistoric cave paintings
(c) The history of right - handedness and left - handed -ness
(d) The pattern of chipping ancient tools

6. Which of the following refer to the idiom “under the sun” ?

(a) Anything and everything
(b) Alarge number of things
(c) A few things
(d) Somthing

7. Choose a phrasal verb to replaced the explanation in brackets :

When we arrive at the station, we (deseced from) _____ the train .

(a) get down (b) stand down (c) get off (d) stand out

8. Choose the suitable word from the following and fill in the blank :

The medal was awarded for the student’s _____ conduct and courage

(a) non receptive (b) exemplary
(c) unrelible (d) dis[utable

9. Which of the following is a correctly spelt word ?

(a) Hiderence (b) Hindrence
(c) Hindarrence (d) Hindrance

10. Which of following statements is grammatically correct?

(a) The earth revolves round the sun
(b) I have not seen him since four years
(c) she met an one- eyed man
(d) One of the books borrowed by the students are famous

11. Choose the set of words from among the alternatives given , which when inserted in the sentence best suit the meaning of the sentence .

The _____ of evidence was on the side of plaintif since all but one witnesses testify his story was ____

(a) paucity , accurate (b) prosperity , far- fetched
(c) prepondenrance, correct (d)accuracy, insufficient

12. Choose the one which is nearest in meaning to the word “TURN UP”

(a) Show up (b) Some up (c) Land up (d) Crop up

13. The phase “Ready to believe” means

(a) Credulous (b) Creditable
(c) Credible (d) Incredible

14. Choose the appropriate words from among the choices to fill in the blank in sentence :

(a) impair (b) impede (c) impose (d) impel

15. Choose the set of words for each blanks that best fits the meaning of the following sentence as a whole :

_____ green and black tea are obtained from the same plant , there are quite a few significant differences _____ them .

(a) Since , among (b) However, in

(c) Though , between (d) Because , across

16. Choose the correct alternatives which can be subsituted for the given word / sentence :

(a) Hermit (b) Pilgrim (c) Saint (d) Medicant

17. Pick out the most effective word from the give words to fill tn the blanks to make the sentence meaningfully complete :

Some people _____ themselves into believing that they are indispensable to the organization they work for.

(a) keep (b) fool (c) delude (d) denigrate

18. Fill in the blanks with appropriate phase to make the sentence meaningfully complete ,

(a) In case (b) In case of

(c) In case to (d) In case from

19. In the following sentence , choose the most suitable one word for all expression

" A book containing summarized information on all branches of knowledge "

(a) Dictionary (b) Anthology

(c) Encyclopedia (d) Directory

20. Pick out the most effictive word from the given word to fill in the blanks to make the sentence meaningful completely

The man was about to move his bike into the compound of his apatrment when a passer by _____ down te motor cycle.

(a) Forced (b) Fell (c) Turned (d) Knocked

SECTION-B (COMPUTER)

21. Which one of the following boolean algebraic rule is correct?

(a) A .A'=1 (b) A+AB=A+B

(c) A+A'B = A+B (d)A(A+B)+B

22. The representation of a floation point binary number +1001.11 in 8 -bit fraction and 6-bit exponent formate is

(a) Fraction : 01001110 exponent : 000100

(b) Fraction : 00001001 exponent : 000011

(c) Fraction : 10010000 ex0ponent : 110000

(d) Fraction 00100100 exponent :011000

23. Which term is redudent is the expression AB+A'C+BC?

(a) BC (b)A'C (c)AB (d)None

24. Let the memory access time is 10 milliseconds and cache hit ratio 15 % .The effective memory access time is ?

(a) 2 milli seconds (b) 1.5 milli seconds

(c) 1.85 micro seconds (d) 1.85 millu seconds

25. Which of the following is the representation of decimal number (- 147) in 2's compliment notation on a 12-bit machine ?

(a) 111101101100 (b) 110001001101

(c) 111101101101 (d) 000001101101

26. The first instructor of bootstrap loader program of an operating system is stored in

(a) RAM (b) Hard Disk (c) BIOS (d) None

27. Consider the equation $(40)_x = (132)_y$ in some bases x and y . Then a possible set of values of x and y are

(a) 8 and 12 (b) 12 and 8 (c) 6 and 12 (d) 12 and 6

28. The smallest integer that can be represented by an 8-bit number in 2's complement form is

(a) -256 (b) -128 (c) 127 (d) -255

29. Which of the following is a functionally complete set of gates ?

(i) NAND (ii) NOR

(a) I but not II (b) II but not I

(c) Neither I not II (d) Both I and II

30. The toal number of binary function that can be defined using n boolen variable is

(a) $2^n - 1$ (b) 2^n

(c) 2^{n+1} (d) None

SECTION-C (Reasoning)

31. Two person S and M have made the following statement among themselves .

***** S says that I am certainly not over 40 years .

***** M says that I am 38 years and you are at least 5 years older then me .

*****S says you are at least 39 yaers.

If all the above statments are wrong , what are the ages of M and S ?

(a) 36 and 40 (b) 36 and 41

(c) 37 and 40 (d) cannot be determined

32. What is the largest number of positive integer to be picked up randomly so that the sum or difference of any two of the chosen number is divisible by 10 ?

(a) 2 (b) 5 (c) 7 (d) 10

33. Five children were administered psychological tests to know their intellectual levels . In the report psychogists point that child A is less intelligent than child B . The child C is less intelligent then D , The child B is less intelligent then child C and child A is less intelligent than child E . Which child is most intelligent ?

(a) D only (b) E only

(c) D or E (d) Neither D and E

34. From a group of 7 men and 6 women , a committee of 5 person with more males than females is to be formed . In how many ways can this be done ?

(a) 564 (b) 645 (c) 735 (d) 756

35. A.,B,C,D,E are 7 area group of friends from a club . There are two house wives , one lecturer , one architect , one accountant and one lawyer in the group . There are two married couples. The lawyer is married to D , Who is a house wife . No lady is either an archirect or an accountant . C, the accountant is married to F , Who is a lecturer.If E is not a house wife ,What is the profession of E ?

(a) Lawyer (b) Architect (c) Lecturer (d)Accountant

36. There are five books A,B,C,D and E placed on a table . If A is placed below E , C is placed above D , B is placed below A and D is placed above E , then which of the following books touches the surface of the table .

(a) C (b) B (c) A (d) E

37. The following series is obtained by considering representations of decimal 99 in different number systems . 99, 90 , 83 , 78 ___ , ___

(a) 71 , 69 (b)69, 57 (c)67 , 59 (d)69 , 63

Directions : 38 to 40 are based on the following :

* In the family of six person A, B, C , D , E and F , there are two married couples .

***** D is the grandmother of A and mother of B

* C is wife of B and mother of F

* F is granddaughter of E

38. What is C to A ?

(a) Daugher (b) Mother

(c) Father (d) Can not be determined

39. Which of the following is true ?

(a) A is brother of F (b) A is sister of F

(c) B has two daughters (d)None

40. Who among the following is one of the couples ?

(a) CD (b) DE (c) EB (d) None

41. The missing number in the following series 336, 210 , 120, 60 , _____, 6 is

(a) 24 (b) 30 (c) 34 (d) 40

42. If the day after the day after tomorrow is three days before Friday , then today is

(a) Tuesday (b) Thrusday (c) Saturday (d) Monday

43. Find the missing term of the following series?

DCXW, HGTS, ...POLK , TSHG

(a) KLOP (b) LKOP (c) KLPO (d) LKPO

44. Four passenger in a train find that they from an interesting group .Two of them are lawyers and the other two are doctor .Two of them speak Bengoli and the other two speak Hindi and no two of the same profession speak the same language . They also find two of them are Christions and two are muslims and non two of the same religion speak the same language. The Hindi speaking doctor is a Christian . Then which of the following statement logically follows ?

(a) The Bengali Spaeking lawyer is a Muslim

(b) The Christian lawyer speaks Bengali

(c) The Bengali speaking doctor is a Christian

(d) The Bengali speaking doctor is a Muslim

Directions : 45 to 47 are based on the following :

In an amusement park seven friends -Feroz , Gautam , Harish , Javed , Kumar , Laxman and Mohan are deciding who will ride the roller coaster . There is time for only one ride before the park closes.

*If Feroz rides Gautam must ride

*If Gautam and Harish both ride , javed cannot ride

*If Harish and javad both ride , Laxman cannot ride

*If javed rides , either kumar or Mohan must ride

kumar and Laxman cannot both ride, but one of them must ride .

*kumar and Mohan cannot both ride .

45. Which of the following is an acceptable combination of riders if only three people ride ?

(a) Harish , javed and Laxman

(b) Harish , javed and kumar

(c) Feroz , Gautam and javed

(d) Gautam , kumar and Laxman

46. If javed and Mohan both ride , which of the following is true

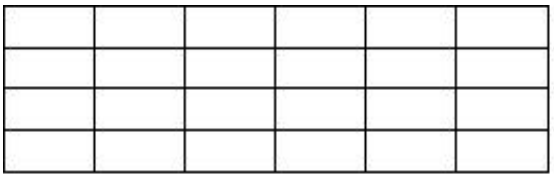
(a) Gautam cannot ride (b) Harish must ride

(c) Feroz cannot ride (d) Laxman must ride

47. If Feroz and harish both ride, what is the greatest number of people who can ride ?

(a) 5 (b) 7 (c) 4 (d) 6

48. The number of square in the following 4×6 grid is



(a) 36 (b) 44 (c) 51 (d) **54**

49. A Cube is made up of 125 one cm. square cubes placed on a table . How many squares are visible only on three sides ?

(a) 4 (b) 8 (c) 12 (d) 16

50. Three thieves rob a bakery of bread , one after the other , Each thief takes half of what is present and half a bread . If 3 breads remains at the end , What is the number of breads that were presents initially ?

(a) 24 (b) 31 (c) 37 (d) 41

51. A caterpiller crawls up a pole of 75 inches high , standing from the ground . Each day it crawls up 5 inches and each night it slides down 4 inches . When will it reach the top

(a) At the end of 70 days (b) At the end of 71 days

(c) At the end of 72 days (d) At the end of 73 days

52. A man's investment doubles in every 5 years . If he invested Rs. 5000 in each of the years 1990 , 1995 , 2000 and 2005 , then what was the total amount recieved by him in 2010?

(a) Rs. 1,40,000 (b) 30,000 (c) 70,000 (d) 1,50,000

Directions : 53 to 57 are based on the following :

A.B,C,D,E,F G and H are sitting around a circular table facing the center , Each one of them has a different profession viz . doctor , engineer , architect, teacher , clerk , shopkeeper , banker m and businessman

* A sits third to right of teacher .

* D sits seconds to left of G .

* G is not an immediate neighbour of teacher ,

* Only one person sits between B, the shopkeeper and the teacher .

* The one who is an architect sits third to right of the teacher ,

* H sits between architect and engineer .

*E is not an immediate neighbour of H .

* Engineer sits third to the right of clerk .

* Only one person sits between the businessman and F.

53. E is neither a businessman nor a doctor . Who amongst the following is the clerk ?

(a) C (b) D (c) E (d) G

54. Which of the following is trues with respect to the given sitting arrangement ?

(a) E is an immediate neighbour of the engineer ,

(b) E is an architect

(c) The clerk is an immediate neighbour of the banker

(d) The teacher sits between H and the engineer

55. What is the profession of H ?

(a) Architect (b) Shopkeeper

(c) Banker (d) Teacher

56. Who sits exactaly between the architect and businessman ?

(a) C and H (b) Clerk

(c) Banker and Shopkeeper (d) Doctor

57. Who sits immediately right to the businessman ?

(a) Teacher (b) Doctor (c) Clerk (d) Banker

58. Raghav left his home for office in car . He drove 15 km straight towards North and then turned east wards and coverd 8 km . He then turned to left and coverd 1 km . He again turned left and drove for 20 km and reached office. How far and in which direction is his office from the home ?

(a) 20 km North - West (b) 15 km North - West

(c) 30 km North - West (d) 25 km North

59. Johen is 20 years older than Steve . In 10 year , Steve" s age will be half that of John , What is steve's age now ?

(a) 2 (b) 8 (c) 10 (d) 20

60. Pointing to a boy , Aruna said to Pushpa . "The mother of his father wife of your maternal grand - father ".How is pushpa related to that boy?

(a) Sister (b)Niece (c) Cousin sister (d) Wife

61. Which of the following pairs of number follow the numbers in the series 2,4 ,12 , 24, 72 , ___, ___ ?

(a) 144,432 (b) 288,332 (c) 332,288 (d) 432,144

62. P, Q , R,S ,T and U are sitting in two rows , three in each row facing each other .

* R is second to the left of P .

* Q and T are facing each other .

* S and P diagonally opposite to each other

* Q is not a neighbour of R .

Which of the following sitting in a row ?

(a) P,Q,R (b)P,U,S (c) U,T,S (d) P,T,R

Directions : 63 to 66 are based on the following :

Three are six teacher A, B, C , D ,E and F in a school , Each teacher has to teach two subjects , one compulsory and the other optional . D's optional is History , while three others have it as a compulsory subject , E and F have Physics as one of their subjects , F 's compulsory subject in Mathematics , which is an optional subject of both C and E , History and Englilsh are A's subject but in term of compulsory and optional subjects , they are reserved of D's Chemistary is an optiional subject of one of the teachers . There is only one female teacher , who has English as her compusory subject ?

63. What is compulsory subject?
(a) Physics (b)Chemistary (c) Englilsh (d) History

64. Who among the following , has chemistary as a subject?
(a) A (b) B (c) C (d) D

65. Which of the following group of teacher has History as the compulsaory subject ?
(a) B , C and D (b) C and D
(c) A, B and C (d) A,C and D

66. Disregrading which is compulsory or optional subject , who has the same two subject combination as that of F ?
(a) B (b) E (c) D (d) A

67. If TRANSFER is coded as RTNAFSRE , then ELEPHANT would be coded as ?
(a) LEPEHATN (b) LEPEAHTN
(c) LEEPAHTN (d) LEPEAHNT

68. Which two of the following numbers comes next in the following sequence ? 61, 57 , 50 , 61, 43 , 36 , 61 .....
(a) 29,61 (b)29,20 (c) 29,22 (d) 31,61

69. How many minimum number of colors will be required to paint all the sides of a cube without the adjacent sides having the same colors ?
(a) 3 (b) 4 (c) 5 (d) 6

70. In the following sequence , which pair of number fill in the blanks ?
1, 1, 3 , 2 , 8, 5 , 21 , 13 ___ , ____
(a) 54,33 (b) 34,55 (c) 55,34 (d) 33,54

SECTION-D (Mathematics)

71. A and B are independent witnesses in a case, the chance that A speaks truth is x and B speaks truth is y , If A and B agree on certain statements , the probability that the statement is true is

(a) $\frac{xy}{xy+(1-x)(1-y)}$ (b) $\frac{xy}{(1-x)(1-y)}$

(c) $\frac{(1-x)(1-y)}{xy+(1-x)(1-y)}$ (d) $\frac{x+y}{xy+(1-x)(1-y)}$

72. The harmonic mean of two number is 4 , Their arithmetic mean A and the geometric mean G satisfy the relation $2A+G^2=27$, then the two numbers are
(a) 4 and 2 (b) 6 and 3 (c) 5 and 7 (d) 4 and 1

73. In an entrance test there are multiple choice questions , with four possible answer to each question of which one is correct , The probability that a student knows the answer to a question is 90% , If the student gets the correct answer to a question , then the is probability that he was guessing is
(a) 37/40 (b) 1/37 (c)36/37 (d) 1/9

74. A man is known to speak the truth 2 out of 3 times . He threw a dice cube with 1 to 6 on its faces and reports that it is 1 . Then the probability that it is actually 1 is
(a) 1/2 (b) 1/7 (c) 2/7 (d) 5/6

75. Let A and B be two events such that ?

$P(\overline{A\cup B})=\frac{1}{6}, P(A\cup B)=\frac{1}{4},\ and\ \ P(\overline{A})=\frac{1}{4}$,

where $\overline{A}$ stands for complement of event A. Then the events $A\ and\ B$ are
(a) independent but not equally likely
(b) mutually exclusive and independent
(c) equally likely and mutually excllisive
(d) equally likely but not independent

76. The mean and variance of a random variable X having a binomial distributon are 4 and 2 respectively , The P(X=1) is?
(a) 1/32 (b) 1/16 (c) 1/8 (d) 1/4

77. If $\overline{X}$ is the mean of a distribution of X , then under usual notation $\sum_{i=1}^{n} f_i(x_i-\bar{x})$ is ?
(a) Mean deviation about mean
(b) Standard deviation (c)1 (d) 0

78. If $E_1\ and\ E_2$ are two events associated with a random experiment such that $P(E_2)=0.35$, $P(E_1 or\ E_2)=0.85$ and $P(E_1 and\ \ E_2)=0.15$ then $P(E_1)$ is ?
(a) 0.25 (b) 0.35 (c) 0.65 (d) 0.75

79. Find a matrix X such that 2A+ B+X=0 , where $A=\begin{bmatrix}-1 & 2\\ 3 & 4\end{bmatrix}\ and\ B=\begin{bmatrix}3 & -2\\ 1 & 5\end{bmatrix}$?

(a) $\begin{bmatrix}1 & 2\\ 7 & 13\end{bmatrix}$ (b) $\begin{bmatrix}-1 & -2\\ -7 & -13\end{bmatrix}$

(c) $\begin{bmatrix}13 & 2\\ 7 & 1\end{bmatrix}$ (d) $\begin{bmatrix}-13 & -2\\ -7 & -1\end{bmatrix}$

80. If in a triangle ABC , the altitudes from the vertices A,B ,C on opposite sides are in HP , then Sin A , Sin B , Sin C are in ?
(a) HP (b) Arithmetico-Geometric progression
(c) AP (d) GP

81. $\sim$, are the roots of an equation $x^2 - 2x\cos^{-} + 1 = 0$ then the equation having $\sim^{n}$ and ^{n} is ?

(a) $x^2 - (2\cos n^{-})x + 1 = 0$

(b) $2x^2 - (2\cos n^{-})x - 1 = 0$

(c) $x^2 + (2\cos n^{-})x + 1 = 0$

(d) $x^2 + (2\cos n^{-})x - 1 = 0$

82. The equation $(x-a)^3 + (x-b)^3 + (x-c)^3 = 0$ has

(a) All three real roots

(b) One real and two imaginary root

(c) Three real roots , namely $x = a$, $y = b, z = c$

(d) None of these

83. Three positive number whose sum is 21 are in arithmetic progression , If 2,2,14 are added to them added to them respectively then resulting number are in geometric progression .Then which of the following is not among the three number ?

(a) 25 (b) 13 (c)1 (d) 7

84. If $Sin^{-1}\frac{2a}{1+a^2} + Sin^{-1}\frac{2b}{1+b^2} = 2\tan^{-1} n$ then?

(a) $n = \frac{(a-b)}{(1+ab)}$ (b) $n = \frac{(ab)}{(a-a)}$

(c) $n = \frac{(a+b)}{(1-ab)}$ (d) $n = \frac{(1-ab)}{(1+ab)}$

85. The value of A that satisfies the equation $a\sin A + b\cos A = c$ is equal to ?

(a) $\tan^{-1}\left(\frac{a}{b}\right) \pm \cos^{-1}\left(\frac{c}{\sqrt{a^2+b^2}}\right)$

(b) $\tan^{-1}\left(\frac{c}{b}\right) \pm \sin^{-1}\left(\frac{a}{\sqrt{a^2+b^2}}\right)$

(c) $\tan^{-1}\left(\frac{a}{b}\right) \pm \sin^{-1}\left(\frac{c}{\sqrt{a^2+b^2}}\right)$

(d) None

86. If $\tan x = \frac{-3}{4}$ *and* $\frac{3®}{2} < x < 2®$, then the value of $\sin 2x$ is ?

(a) 7/25 (b) -7/25 (c) 24/25 (d) -24/25

87. Fine the principal value of $\cot^{-1}\left(-\sqrt{3}\right)$?

(a) $\frac{®}{2}$ (b) $\frac{®}{6}$ (c) $\frac{7®}{6}$ (d) $\frac{5®}{6}$

88. If $\cos^{-} = \frac{4}{5}$ and $\cos¤ = \frac{12}{13}$, with $^{-}$ and ¤ both in the fourth quardant , the value of $\cos(^{-} + ¤)$ is ?

(a) $-\frac{16}{65}$ (b) $-\frac{33}{65}$ (c) $\frac{33}{65}$ (d) $\frac{16}{65}$

89. The value of $\sin 36°$ is ?

(a) $\frac{\sqrt{10+2\sqrt{5}}}{4}$ (b) $\frac{\sqrt{10-2\sqrt{5}}}{4}$

(c) $\frac{\left(\sqrt{5}+1\right)}{4}$ (d) $\left(\frac{\sqrt{5}-1}{4}\right)$

90. Express $(\cos 5x - \cos 7x)$ as a product of sines or cosines or sines and cosines .

(a) $2\cos 4x\ \cos x$ (b) $2\sin 4x\ \sin x$

(c) $2\sin 6x \sin x$ (d) $2\cos 6x\ \cos x$

91. If non zero number a,b,c are in A.P , then the straight line $\frac{x}{a} + \frac{y}{b} + \frac{1}{c} = 0$ always passes through a fixed point , then the point is

(a) $(1,-2)$ (b) $\left(1, \frac{1}{2}\right)$ (c) $(-1,2)$ (d) None

92. If the lines $x + (a-1)y + 1 = 0$ and $2x + a^2 y - 1 = 0$ are prepedicular, then the condition satisfied by a is

(a) $|a| = 2$ (b) $0 < a < 1$

(c) $-1 < a < 0$ (d) $a = -1$

93. In a triangle ABC ,Let $C = \frac{®}{2}$, If r is the inradius and R is circumradius of the triangle ABC ,then $2(r+R)$ equals

(a) $a + c$ (b) $a + b + c$ (c) $a + c$ (d) $b + c$

94. If $x^2+3xy+2y^2-x-4y-6=0$ represents a pair of straight lines , their point if intersection is
(a) (0,0) (b) (8,5) (c) (8,-5) (d) (-2,5)

95. The equation of the tangent line to the curve $y=2x\sin x$ at the point $\left(\frac{®}{2},®\right)$ is

(a) $y=2x+2®$ (b) $y=2x$

(c) $y=-2x+2®$ (d) $y=-2x$

96. If the graph of $y=(x-2)^2-3$ is shifted by 5 units up along y -axis and 2 unit to the right along the x-axis, then the equation of the resultant graph is ?

(a) $y=x^2+2$ (b) $y=(x+2)^2+5$

(c) $y=(x+2)^2+2$ (d) $y=(x+4)^2+2$

97. The direction cosines of the vector $\vec{a}=\left(-2\hat{i}+\hat{j}-5\hat{k}\right)$ are ?

(a) -2,1,-5 (b) $\frac{1}{3},\frac{-1}{6},\frac{-5}{6}$

(c) $\frac{2}{\sqrt{30}},\frac{1}{\sqrt{30}},\frac{5}{\sqrt{30}}$ (d) $\frac{-2}{\sqrt{30}},\frac{1}{\sqrt{30}},\frac{-5}{\sqrt{30}}$

98. The equation of the hyperbola with center at the origin , lenght of the transverse axis is 6 and one focus at(0,4) is ?

(a) $\frac{y^2}{9}+\frac{x^2}{7}=1$ (b) $\frac{y^2}{9}-\frac{x^2}{7}=1$

(c) $\frac{y^2}{7}+\frac{x^2}{9}=1$ (d) $\frac{y^2}{7}-\frac{x^2}{9}=1$

99. If $\vec{a},\vec{b},\vec{c}$ are vectors such that $\vec{a}+\vec{b}+\vec{c}=0$ and $\left|\vec{a}\right|=7,\left|\vec{b}\right|=5,\left|\vec{c}\right|=3$, then the angle between the vectors $\vec{b}$ and $\vec{c}$ is ?

(a) 60^0 (b) 30^0 (c) 45^0 (d) 90^0

100. If $a\hat{i}+\hat{j}+\hat{k},b\hat{i}+\hat{j}+\hat{k},\ \hat{i}+\hat{j}+c\hat{k}(a\neq b\neq c\neq 1)$ are co- plananr, then the value of

$\frac{1}{1-a}+\frac{1}{1-b}+\frac{1}{1-c}$ is

(a) -1 (b) -1/2 (c) 1/2 (d)1

101. Let $\vec{a},\vec{b}\ and\ \vec{c}$ be three vector having magnitudes 1 , 1 and 2 respectively , If $\vec{a}\times(\vec{a}\times\vec{c})-\vec{b}=0$ then the acute angle between $\vec{a}$ and $\vec{c}$ is

(a) $®/4$ (b) $®/6$ (c) $®/3$ (d) None

102. Let $\vec{a},\vec{b},\vec{c}$ be vector such that

$\left|\vec{a}\right|=2,\left|\vec{b}\right|=2,\left|\vec{c}\right|=5$ and $\vec{a}+\vec{b}+\vec{c}=0$ The value of $\vec{a}.\vec{b}+\vec{b}.\vec{c}+\vec{c}.\vec{a}$ is ?

(a) 38 (b) -38 (c) 19 (d) -19

103. If $\vec{a}=\left(\vec{i}+2\vec{j}-3\vec{k}\right)$ and $\vec{b}=\left(3\vec{i}-\vec{j}+2\vec{k}\right)$ then the angle between $\left(\vec{a}+\vec{b}\right)$ and $\left(\vec{a}-\vec{b}\right)$ is?

(a) $®/3$ (b) $®/4$ (c) $®/2$ (d) $2®/3$

104. The number if element in the power set P(S) of set S={2,{1,4}} is ?
(a) 2 (b) 4 (c) 8 (d)10

105. If $(1-x+x^2)^n=a_0+a_1x+a_2x^2+.....+a_{2n}x^{2n}$, then $a_0+a_2+a_4+...+a_{2n}$ is ?

(a) $\frac{3^n+1}{2}$ (b) $\frac{3^n-1}{2}$ (c) $\frac{1-3^n}{2}$ (d) $3^n+\frac{1}{2}$

106. m dustinct animals of a circus have to be placed in m cages , one in each cage . There are n small cages and p small animals $(n<p<m)$. The large anumals are so large that they do not fit in small cage , However , small animals can be put in any cage , The number of ways of putting the animals into cages is :

(a) $\{^{(m-n)}P_p\}\{^{(m-p)}P_{(m-p)}\}$ (b) $^{(m-n)}C_p$

(c) $\{^{(m-n)}C_p\}\{^{(m-p)}C_{(m-p)}\}$ (d) $^{(m-n)}P_p$

107. Let A and B two sets containing four and two elements respectively , The number of subsets of the set $A\times B$, each having at least three elements is :
(a) 270 (b) 239 (c) 219 (d) 256

108. The slop of the function

$$f(x)=\begin{cases} x^2\sin\left(\dfrac{1}{x}\right), & x\neq 0 \\ 0, & x=0 \end{cases}$$?

(a) 1 (b) 0 (c) -1 (d)None

109. What is the largest are of an isosceles tringle with two edges of length 3 ?

(a) 3 (b) 3/2 (c)9 (d) 9/2

110. The value of $\int_0^{\pi} x^3 \sin x dx$ is

(a) $\pi^3-6\pi$ (b) $-\pi^3-6\pi$

(c) $-\pi^3+6\pi$ (d) $\pi^3+6\pi$

111. Let $f(a)$ be a polynomial of degree four ,having extreme value at $x=1$ and $x=2$.

$$If \lim_{x\to 0}\left[1+\frac{f(x)}{x^2}\right]=3 \text{ then } f(2) \text{ is ?}$$

(a) 0 (b) 4 (c)-8 (d) -4

112. The maximum value of

$$4\sin^2+3\cos^2 x+\sin\frac{x}{2}+\cos\frac{x}{2} \text{ is}$$

(a) 4 (b) $3+\sqrt{2}$ (c) 9 (d) $4+\sqrt{2}$

113. The solution of $(e^x+1)ydy=(y+1)e^x dx$ is .

(a) $e^y=c(e^x+1)(y+1)$ (b) $e^y=e^x+y+1$

(c) $y=(e^x+1)(y+1)$ (d) None

114. Evaluate $\int_0^1 x(1-x)^n dx$.

(a) $\dfrac{-1}{(n+1)(n+2)}$ (b) $\dfrac{1}{(n+1)(n+2)}$

(c) $(n+1)(n+2)$ (d) $(n-1)(n-2)$

115. The critical point and nature for the function

$f(x,y)=x^2-2x+2y^2+4y-2$ is.

(a) (1,1) Maximum (b) (1,-1) ,Maximum

(c) (1,1) Minimum (d) (1,-1) Minimum

116. If $y=\cos^2 x^2$, *find* $\dfrac{dy}{dx}$.

(a) $4x^2\sin x^2\cos x^2$ (b) $-4x\cos x^2\sin x^2$

(c) $2x\sin x^2\cos x^2$ (d) $-2x\cos x^2\sin x^2$

117. The derivatives of $(x^3+e^x+3^x+\cot x)$ with respect to x is .

(a) $3x^2+e^x+3^x(\log 3)-\cos ec^2 x$

(b) $3x^2+e^x+3^x(\log 3)+\cos ec^2 x$

(c) $3x^2+e^x+3^x(\log 3)-\sec^2 x$

(d) $3x^2+e^x+3^x(\log 3)+\sec^2 x$

118. The solution of the equation $\dfrac{dy}{dx}=e^{x+y}+x^2e^y$ is

(a) $e^{x-y}+\dfrac{x^3}{3}+c$ (b) $e^x+e^{-y}+\dfrac{x^3}{3}=c$

(c) $e^x-e^{-y}=\dfrac{x^3}{3}+c$ (d) None

119. Differentiate $\{-\log(\log x), x>1\}$ with respect to x

(a) $-1/(x\log x)$ (b) $1/(\log\ x)$

(c) $1/x$ (d) $x\log x$

120. Evaluate $\lim_{x\to 0}\dfrac{x\tan x}{(1-\cos x)}$

(a) 1/2 (b) -1/2 (c) -2 (d)2

NIMCET 2017 Answer Key

1. (b)	**2.** (d)	**3.** (c)	**4.** (d)	**5.** (c)	**6.** (a)	**7.** (c)	**8.** (b)	**9.** (d)	**10.** (a)
11. (c)	**12.** (a)	**13.** (a)	**14.** (a)	**15.** (c)	**16.** (b)	**17.** (c)	**18.** (b)	**19.** (d)	**20.** (d)
21. (c)	**22.** (d)	**23.** (d)	**24.** (b)	**25.** (c)	**26.** (a)	**27.** ()	**28.** (b)	**29.** (d)	**30.** (d)
31. (d)	**32.** (b)	**33.** (c)	**34.** (d)	**35.** ()	**36.** (b)	**37.** (a)	**38.** (b)	**39.** (d)	**40.** (b)
41. (a)	**42.** (c)	**43.** (d)	**44.** (b)	**45.** (b)	**46.** (d)	**47.** (a)	**48.** (c)	**49.** (a)	**50.** (b)
51. (b)	**52.** (d)	**53.** (d)	**54.** (c)	**55.** (d)	**56.** (d)	**57.** (c)	**58.** (a)	**59.** (c)	**60.** (c)
61. (a)	**62.** (d)	**63.** (d)	**64.** (b)	**65.** (c)	**66.** (c)	**67.** (b)	**68.** (c)	**69.** (a)	**70.** (c)
71. (a)	**72.** (b)	**73.** (b)	**74.** (c)	**75.** (a)	**76.** (a)	**77.** (d)	**78.** (c)	**79.** (b)	**80.** (c)
81. (a)	**82.** (b)	**83.** (a)	**84.** (c)	**85.** (a)	**86.** (d)	**87.** (d)	**88.** (c)	**89.** (b)	**90.** (c)
91. (d)	**92.** (d)	**93.** (c)	**94.** (c)	**95.** (b)	**96.** (d)	**97.** (d)	**98.** (b)	**99.** (a)	**100.** ()
101. (b)	**102.** (d)	**103.** (c)	**104.** (b)	**105.** (a)	**106.** (a)	**107.** (c)	**108.** (b)	**109.** (d)	**110.** (a)
111. (a)	**112.** (d)	**113.** (a)	**114.** (b)	**115.** (d)	**116.** (b)	**117.** (a)	**118.** (b)	**119.** (a)	**120.** (d)