M.Voc Mobile Phone Application Development

1. The cardinality of the power set of {0, 1, 2,....., 10} is

   (A) 1024
   (B) 2048
   (C) 4096
   (D) 2012

2. If p, q, r and s are positive real numbers such that p + q + r + s = 2, then M = (p + q) (r + s) satisfies the relation

   (A) $0 < M \leq 1$
   (B) $1 \leq M \leq 2$
   (C) $2 \leq M \leq 3$
   (D) $3 \leq M \leq 4$

3. The complex numbers $z = x + i y$, which satisfy the equation $|(z - 3i) / (z + 3i)| = 1$, lie on

   (A) the x-axis
   (B) the straight line y = 3
   (C) a circle passing through origin
   (D) the y-axis

4. If $f(x)$ is an odd periodic function with period 2, then f (4) equals to

   (A) – 4
   (B) 4
   (C) 2
   (D) 0

5. The solution of $dy/dx = (ax + h)/(by + k)$ represents a parabola when

   (A) $a = 0, b = 0$
   (B) $a = 1, b = 2$
   (C) $a = 0, b \neq 0$
   (D) $a = 2, b = 1$

6. The solution of the differential equation $2x\,(dy/dx) - y = 3$ represents

(A) a straight line
(B) a circle
(C) a parabola
(D) an ellipse

7. If $y = f(x)$, passing through (1, 2) satisfies the differential equation $y\,(1+xy)\,dx - x\,dy = 0$, then

(A) $f(x) = 2x / (2 - x^2)$
(B) $f(x) = (x + 1) / (x^2 + 1)$
(C) $f(x) = (x - 1) / (4 - x^2)$
(D) $f(x) = 4x / (1 - x^2)$

8. If $\tan\theta = a/b$, then $b \cos 2\theta + a \sin 2\theta$ is equal to

(A) a
(B) b
(C) b/a
(D) $a + b$

9. The sum of the series $1 + 2^2/2! + 3^2/3! + 4^2/4! + ...$ equals

(A) $2e$
(B) e^{-2}
(C) $e^2 - e$
(D) $e^3 + e$

10. Gauss elimination method is used for solving

(A) algebraic equations
(B) exponential equations
(C) trignometric equations
(D) linear simultaneous equations

11. A circular field has a circumference of 360 km. Three cyclists start together and can cycle 60 km, 72 km, and 90 km a day, round the field. After how many days will they meet again at the starting point?

(A) 45 days
(B) 60 days
(C) 50 days
(D) 40 days

12. If A and B are subsets of a set X, then {A∩(X-B)} ∪ B equals

(A) A ∪ B
(B) A∩B
(C) A
(D) B

13. $\int_C (2\,xdx + 2\,ydy + 4\,zdz)$ evaluated along the curve C between (0, 0, 0) and (2, 2, 2) is

(A) 0
(B) 32
(C) 16
(D) 8

14. The cubic polynomial in x which attains its maximum value 4 and minimum value 0 at x = -1 and x = 1 respectively is given by

(A) $y = x^3 + 7x - 1$
(B) $y = x^3 - 7x - 3$
(C) $y = x^3 - 3x + 2$
(D) $y = 2x^3 - 7x + 2$

15. A window is shaped as a rectangle whose perimeter is 8 m. What must the dimensions of the window be for the window to transmit the largest amount of light?

(A) 3m × 1m
(B) 2.5 m × 1.5 m
(C) 2m × 2m
(D) 2.9 m × 1.1 m

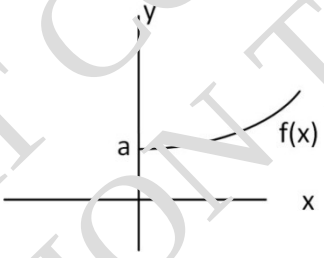
16. If F: R→R is given by $F(x) = (3-x^3)^{1/3}$, then (f∘f) (x) is

(A) $x^{1/3}$
(B) x^3
(C) x
(D) $3-x^3$

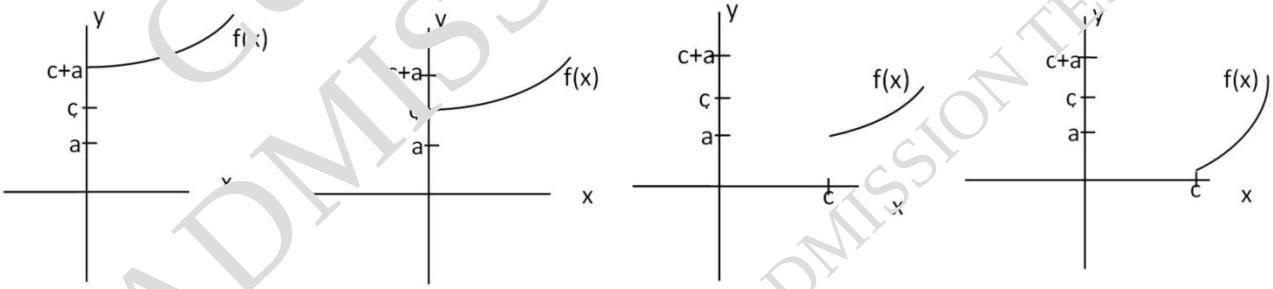
17. When $9b^2 - 4 - 10a$ i and $8b^2 + 20$ i^7 are conjugate to each other, the value of a and b are

(A) (–2, 2), (–2, –2)
(B) (–2, 2), (–2, 2)
(C) (2, –2), (2, 2)
(D) (–2, 2), (2, 2)

18. If graph of $f(x)$ is



then the graph of $c + f(x)$ and $f(x - c)$ are, respectively



(i) (ii) (iii) (iv)

(A) (i) and (iv)
(B) (i) and (iii)
(C) (ii) and (iv)
(D) (ii) and (iii)

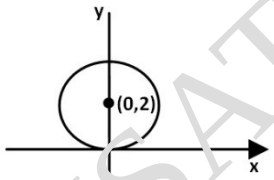
19. If the normal to the curve $y=f(x)$ at the point (3, 4) makes an angle $3\pi/4$ with the x-axis, then $f'(3)$ equals

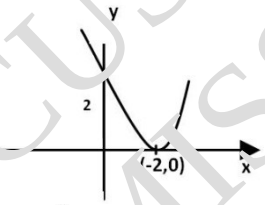
(A) – 1
(B) – 3/4
(C) 4/3
(D) 1

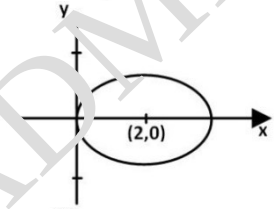
20. The minimum value of a quadratic function $16x^2+16x-3$ is

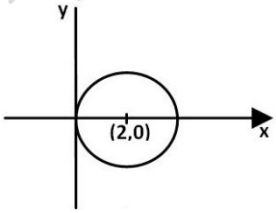
(A) – 2
(B) –1
(C) 1
(D) 2

21. The graph of $f(x) = \sqrt{4-(x-2)^2}$ is

(A) 

(B) 

(C) 

(D) 

22. $\int_{-1}^{1} xe^{-|x|}dx = ¿$

(A) 0
(B) $\frac{1}{2}$
(C) 1
(D) – 1

23. The unit vector parallel to XOY and YOZ plane is

(A) $\frac{1}{\sqrt{6}}(i + j - 2k)$
(B) i
(C) j
(D) k

24. a, b and c are the vectors $(1 - p)i + 2(1 + p)j + (3 + p)k$, $3i + j$ and $2j - 3k$ respectively. If a is perpendicular to b, then angle between a and c is

(A) 2
(B) $\cos^{-1}\left(\frac{3}{\sqrt{62}\sqrt{13}}\right)$
(C) $\frac{\pi}{3}$
(D) $\frac{\pi}{2}$

25. The life of a certain kind of electronic device has a mean 300 hours and standard deviation 25 hours. Assuming that the distribution is normally distributed, then the percentage of life time below 300 hours is

(A) 100%
(B) 10%
(C) 50%
(D) 0%

26. Twenty meters of wire is available for fencing off a flower-bed in the form of a circular sector. Then the maximum area (in sq. m) of the flower-bed is

(A) 12.5
(B) 10
(C) 25
(D) 30

27. The volume generated by the revolution of an equilateral triangle of side 'a' about one of its sides is

(A) $\frac{\pi a^3}{16}$

(B) $\frac{\pi a^3}{3}$

(C) $\frac{\pi a^3}{4}$

(D) $\frac{\pi a^3}{2}$

28. The sum of distances of any point on the ellipse $3x^2+4y^2=24$ from its foci is

(A) $8\sqrt{2}$

(B) $4\sqrt{2}$

(C) $24\sqrt{2}$

(D) $16\sqrt{2}$

29. The equation of motion of a particle along a straight line is given by $\frac{d^2x}{dt^2} + 16x = 0$, where 'x' is the distance of a particle from a fixed point at time 't'. Then x in terms of t is

(A) $x = 2 \cos 2t + 4 \sin 4t$
(B) $x = 2 \cos 4t + 8 \sin 4t$
(C) $x = 2 \cos 2t + 3 \sin 4t$
(D) $x = 2 \cos 2t + (1/4) \sin 4t$

30. Consider: The curve $y^2 = 2x^3$

(i) is symmetric about x – axis
(ii) is symmetric about y – axis
(iii) passes through the origin
(iv) does not exist to the left of y – axis

Then

(A) i, iii, iv are true
(B) ii, iii, iv are true
(C) i, ii, iv are true
(D) i, iv are true

31. Which of the given options provides the increasing order of asymptotic complexity of functions f1, f2, f3 and f4?

f1(n) = 2 ^ n
f2(n) = n ^ (3/2)
f3(n) = n log n
f4(n) = n^ (log n)

(A) f3, f2, f4, f1
(B) f3, f2, f1, f4
(C) f2, f3, f1, f4
(D) f2, f3, f4, f1

32. In a complete k-ary tree, every internal node has exactly k children. The number of leaves in such a tree with n internal nodes is

(A) nk
(B) (n – 1) k +1
(C) n (k – 1) + 1
(D) n (k – 1)

33. The output quality of a printer is measured by

(A) Dot per inch
(B) Dot per sq. inch
(C) Dots printed per unit time
(D) All of the above

34. A computer program that translates one program instructions at a time into machine language is called a/an

(A) Interpreter
(B) CPU
(C) Compiler
(D) Simulator

35. The term gigabyte refers to

(A) 10^9 bytes
(B) 2^9 kilobytes
(C) 2^{10} megabytes
(D) 10^3 megabytes

36. A type of core store that has a lower access time than the devices used for working store in the same processor is known as

(A) Flash memory
(B) Buffer memory
(C) Cache memory
(D) Register memory

37. The preorder traversal sequence of a binary search tree is 31, 20, 10, 12, 25, 23, 39, 35, 47. Which one of the following is the post-order traversal sequence of the same tree?

(A) 10, 20, 12, 23, 25, 35, 47, 39, 31

(B) 12, 10, 25, 23, 20, 47, 35, 39, 31
(C) 12, 20, 10, 23, 25, 47, 35, 39, 31
(D) 12, 10, 23, 25, 20, 35, 47, 39, 31

38. A method of implementing a memory management system is

(A) Buddy system
(B) Random Memory
(C) Virtual Memory
(D) All of the above

39. An algorithm is made up of two independent time complexities f (n) and g (n). Then the complexities of the algorithm is in the order of

(A) f(n) x g(n)
(B) Max (f(n), g(n))
(C) Min (f(n), g(n))
(D) f(n) + g(n)

40. A storage device where the access time is depended upon the location of the data is

(A) Random access
(B) Serial access
(C) Sequential access
(D) Transaction access

41. Which one of the following is a top-down parser?

(A) Recursive descent parser
(B) Operator precedence parser
(C) An LR(k) parser
(D) An LALR(k) parser

42. A compiler which runs on one machine and generates a code for another machine is

(A) Bootstrap
(B) Cross-compiler
(C) Lexical analyzer
(D) Tokenizer

43. Consider a line segment with region codes 0110 and 0010. State whether line is accepted or rejected in Cohen Sutherland line clipping algorithm.

(A) codes of the end point are not same, hence rejected
(B) logical AND of the end point code is not 0000, hence rejected
(C) logical OR of the end point code is not 0000, hence accepted
(D) logical XOR of the end point code is not 0000, hence accepted

44. Which of the following combination of statements are TRUE?

A. Two successive rotations are multiplicative
B. Two successive scaling operations are multiplicative
C. Two successive translations are additive

(A) A and B
(B) B and C
(C) A and C
(D) A, B and C

45. All of the following are examples of real security and privacy risks except:

(A) Hackers
(B) Spam
(C) Viruses
(D) Identity theft

46. Which one of the following is NOT one of the four major data processing functions of a computer?

(A) Gathering Data
(B) Processing Data into Information
(C) Analysing Data or Information
(D) Storing Data or Information

47. In order to process the successive elements of an array in a loop, which of the following addressing modes is most preferred?

(A) Direct
(B) Indexed
(C) Indirect
(D) Implied

48. The operating system belongs to

(A) Utility Software
(B) Application Software
(C) Realtime Software
(D) System Software

49. The most appropriate matching for the following pairs is

A) depth first search	1) heap
B) breadth first search	2) queue
C) sorting	3) stack

(A) A - 1, B -2, C-3
(B) A - 3, B - 1, C-2
(C) A - 3, B - 2, C- 1
(D) A - 2, B - 3, C- 1

50. Computer Virus is a

(A) Hacker Program
(B) Computer Program
(C) Destructive piece of information
(D) None of the above

51. The program starts the working of a computer is

(A) Bootstrap
(B) BIOS
(C) DOS
(D) POSTE

52. If Quick sort is to be performed on a set of elements sorted in reverse order and yet get average time complexity of O (n log n) what approach can be used?

(A) Randomize the elements using randomized merge algorithm
(B) While sorting instead of picking the mid element, pick random element as the pivot element
(C) Use extra pivots between the elements given
(D) Run random backtracking on the elements

53. The "I Love You" Virus is an example of

(A) Trojen virus
(B) Source virus
(C) Script virus
(D) Boot virus

54. SATA stands for

(A) Server Advanced Technology Attachment
(B) Serial Advanced Technology Attachment
(C) Server Array Technology Attachment
(D) Serial Array Technology Attachment

55. Maximum data transfer rate supported by USB 3.0 is

(A) 256 Mbps
(B) 480 Mbps
(C) 640 Mbps
(D) 4 Gbps

56. Which of the following is not applicable for IP?

(A) Error reporting
(B) Handle addressing conventions
(C) Datagram format
(D) Packet handling conventions

57. Which one of the following is NOT a file system?

(A) WinFS
(B) NTFS
(C) Ext3
(D) XPFS

58. Who invented Java Programming language?

(A) James Gosling
(B) William Gates
(C) Alan Cooper
(D) John George Kemeny

59. Which of the following statements are TRUE about an SQL query?

P: An SQL query can contain a HAVING clause even if it does not have a GROUP BY clause
Q: An SQL query can contain a HAVING clause only if it has GROUP BY clause
R: All attributes used in the GROUP BY clause must appear in the SELECT clause
S: Not all attributes used in the GROUP BY clause need to appear in the SELECT clause

(A) P and R
(B) P and S
(C) Q and R
(D) Q and S

60. The outcome of system analysis says that a suitable model is to be suggested when the changes requested by the customer need to be quickly incorporated into the system. What model of development is most suitable?

(A) Waterfall model
(B) Spiral model
(C) Agile model
(D) Evolutionary enhancement model

61. **Direction:** Choose the correct option.

The premiere show will _____ with the awards function taking place on the same day

(A) tie down
(B) tie up
(C) tie in
(D) tie off

62. **Direction:** Choose a correct replacement for the underlined part of the sentence given

To his great <u>chagrin</u> he discovered that he was cheated

(A) disappointment
(B) surprise
(C) relief
(D) unexpectedly

63. **Direction:** Choose a correct replacement for the underlined part of the sentence given

"After family, the school plays an important role <u>while determining</u> the personality of a child and has the greatest effect on the individual."

(A) while determining
(B) to determine
(C) when determining
(D) in determining

64. **Direction:** Choose the one that is grammatically correct

(A) If the door were left open, burglars would have no trouble getting in.
(B) If the door was left open, burglars would have no trouble getting in.
(C) If the door were left open, burglars had no trouble getting in.
(D) If the door was left open, burglars had no trouble getting in.

65. **Direction:** Select the best option that expresses a relationship similar to that expressed in the capitalized pair.

CELEBRATION : : VICTORY

(A) cloud :: rain
(B) house :: construction
(C) defeat :: despair
(D) mourning :: death

66. **Direction:** Select the best option that expresses a relationship similar to that expressed in the capitalized pair.

ACCUMULATE :: ASSETS

(A) associate :: partners
(B) congregate :: mobs
(C) annotate :: footnotes
(D) aggravate :: agitators

67. **Direction:** Choose the correct phrase which best completes the conditional statement

"I can't accept your proposal ____

(A) unless you give me the list of benefits
(B) if you are giving me a list of benefits
(C) if the list of benefits is there
(D) until the list of benefits are given to me

68. **Direction:** Select the most appropriate meaning of the underlined idiomatic phrase

"The teacher <u>gave the student a piece of her mind.</u>"

(A) The teacher advised the student
(B) The teacher scolded the student
(C) The teacher favored the student over other students
(D) The teacher contradicted whatever the student had to say

69. **Direction:** Select the most appropriate meaning of the underlined idiomatic phrase

"The court won't accept the guarantee of <u>a man of straw</u>."

(A) a man who has no legal knowledge
(B) a man who has no substance
(C) a man who is extremely fashionable
(D) a man who has high moral values

70. **Direction:** Choose the correct option.

There is _____ better than a busy life.

(A) none
(B) no
(C) nothing
(D) never

71. **Direction:** Choose the correct question tag.

He runs fast, _____ ?

(A) doesn't he
(B) will he
(C) does he
(D) won 't he

72. **Direction:** Choose the best alternatives from among the options given.

The man in the red shirt _____ as the water pistol in the hands of the youngster _____water.

(A) bent , blew
(B) jumped, gorged
(C) ducked , squirted
(D) crouched , splashed

73. **Direction:** Choose the best alternatives from among the options given

The Government in India has seen everything in the past - from the ____ of onions to _____ in defence contracts.

(A) value, deals
(B) price, kickbacks
(C) abundance , value
(D) cost , drawbacks

74. **Direction:** Choose the best alternative from among the options given

Although the selection process is highly competitive, each application is given the _____ it deserves.

(A) deliberation
(B) treatment
(C) notice
(D) place

75. **Direction:** Choose the best alternative from among the options given

Thankfully, they did not face the _____ of space.

(A) magnitude
(B) constraints
(C) parameters
(D) void

76. **Direction:** Select the option which correctly replaces the underlined part

Although in many places the water hyacinth is considered <u>as a noxious weed, they are</u> deliberately cultivated in West Bengal for pig and cattlefeed.

(A) to be a noxious weed, they are
(B) noxious a weed, they are
(C) a noxious weed, it is
(D) noxious weed, it is

77. **Direction:** Select the option which correctly replaces the underlined part

John, <u>accompanied by his brother and uncle, are scheduled to arrive</u> in Kolkota today.

(A) with his brother and uncle , are scheduled to arrive
(B) and his brother and uncle, is scheduled to arrive
(C) accompanied by his brother and uncle, is scheduled arrival
(D) accompanied by his brother and uncle, is scheduled to arrive

78. **Direction:** Select the option which correctly replaces the underlined part

All trade between India and Pakistan <u>are suspended pending resolution to the Kashmir issue.</u>

(A) is suspended pending resolution of the Kashmir issue
(B) are suspended until resolution of the Kashmir issue
(C) will have to be suspended unless there is resolution of the Kashmir issue
(D) are suspended in anticipation of a final resolution on the Kashmir issue

79. **Direction:** Select the option which correctly replaces the underlined part

The activities of the East India Company had wide-ranging implications both in London <u>as well as across the world.</u>

(A) as well as across the world
(B) as much as across the world
(C) and across the world
(D) and as well as across the world

80. **Direction:** Select the option which correctly replaces the underlined part

Considered the greatest of the Indian post-modernist artists, "Horses" was painted by Hussain around 1975.

(A) 'Horses' was painted by Hussain
(B) 'Horses ' was a painting of Hussain done
(C) the painter of 'Horses ' was Hussain
(D) Hussain painted 'Horses'

81. **Direction:** Read the passage given below and answer the question that follows.

A Harvard University study shows that women who drank sugar sweetened soft drink everyday gain 19 pounds over 8 years. They also have an 83 percent greater risk of developing Type II diabetes compared to women who have less than one such drink a month. Interestingly, fruit juices, which have as many calories, do not appear to increase the risk of diabetes.

The study conducted by Harvard University, suggests which of the following?

(A) Different types of sugar have different effects
(B) Type II diabetes is common among obese people
(C) Most American Women are Cola- lovers
(D) Fruit juices do not result in major weight gain

82. **Direction:** Read the passage given below and answer the question that follows.

The single most shattering statistic about life in America in the late 1990s was that cigarette smoking killed more people than the combined total of those who died from AIDS, car accidents, alcohol, murder, suicide, illegal drugs and fire. The death of more than 400,000 Americans each year, 160,000 of them from lung cancer make a strong case for the prohibition of cigarettes. The case backed by solid evidence, has been made in every public arena since the early 1950s, when the first convincing link between smoking and cancer was established in clinical and epidemiological studies - yet, 50 million Americans still go on smoking.

Which of the following can be inferred from the passage?

(A) Cigarette companies could not survive in the face of opposition directed at them
(B) The cigarette industry is decidedly intact, ready to do business profitably at home and abroad
(C) Cigarettes may kill , but their makers know that the addiction will last
(D) Cigarette companies could not overcome any opposition

83. **Direction:** Read the passage given below and answer the question that follows.

Even more important, the revolution in satellite broadcasting has brought to our breakfast tables and our living rooms, and increasingly to our computers and our mobile phones, glimpses of events from every corner of the globe. Any doubt I might have had about the reach and influence of the global mass communications was dispelled when I happened to be in St.Petersburg, Russia, for a conference and I was approached by a Tibetan Buddhist monk in his robes, thumping a cymbal and chanting his mantras, who paused in his chanting to say: "I've seen you on BBC!". New Communications technology has shrunk the world, and in a real sense made it all one.

Which of the following is an example that reaffirms the concept put forward by the author?

(A) Today communication satellites are being used for distance learning by schools and universities, for video conferencing by business groups, and general commercial telecommunications
(B) DBS technology, used for DTH - oriented (Direct- to- Home) satellite TV services, has revolutionized the telecommunications industry
(C) Satellite communication technology can be very useful for users who are located in very remote areas and cannot access a wireline broadband or dial- up connection
(D) Today, communication satellites are even successfully used for military communication applications

84. **Direction:** Read the passage given below and answer the question that follows.

Many still turn up their noses at eating sea-food, but the catch at the end of the line is indeed good for you. One of the first major studies to look at reports about women who eat fish, states that those who consume sea-food five times a week have a 50% lower risk of stroke.

Which of the following would strengthen the finding in the above study?

(A) Fish fat has long been consumed to fortify the body against common cold
(B) Eating fish has long been attributed to restricting aging, making it a favorite with women
(C) Fish fat is less harmful than the fat in red meat
(D) Fatty acids in fish reduce the stickiness of blood, reducing the possibility of clots chocking the arteries

85. **Direction:** Read the passage given below and answer the question that follows.

Property rates gather steam only when the market is suffering from financial crisis. According to property experts, the time is ripe for putting residential property on the block, since correction in fair pricing has not gained ground. However, if purchase of property continues, the rates are again bound to rise in the next few months, due to an increase in demand. Therefore investors must not invest in the near future.

Which of the following can be considered a valid conclusion from the passage?

(A) Property experts are always right about information regarding the sale of property
(B) A market may be conducive to buying property, but at the same time not favorable for investing in it
(C) Property rates always fall during a financial crisis
(D) Investors must constantly refer to the market before purchasing property

86. **Direction:** Fill in the blanks with the correct options

"He was hit_____ a lunatic _____ a club."

(A) by, from
(B) by, with
(C) at , by
(D) in, of

87. **Direction:** Fill in the blanks with the correct options

"The image you ___ _____ on the phone and the initial ____ _____ you create with the caller are extremely important."

(A) fabricate, introduction
(B) project, rapport
(C) flaunt , understanding
(D) flout, connection

88. **Direction:** Fill in the blanks with the correct options

Children are driven to seek answers to ____ questions that their mind gathers out of ____.

(A) metaphysical, innocence
(B) fleeting, ignorance
(C) mundane, interest
(D) intriguing, curiosity

89. **Direction:** Pick the right word which would complete the sentence correctly and meaningfully

"Meager monsoon rains have pushed India to the brink of drought, putting pressure on food prices and energy supplies and _____ economic growth"

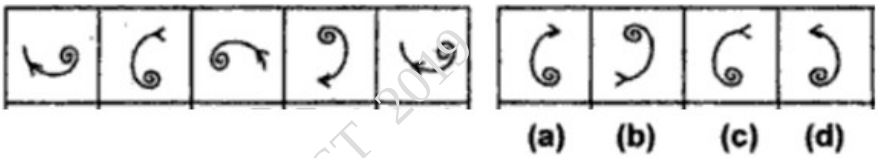
(A) imperiling
(B) terminating
(C) accelerating
(D) spurting

90. **Direction:** Pick the right word which would complete the sentence correctly and meaningfully

The rural retail chain would make available agricultural equipment under one roof; provide training _____ usage of equipment and offer spares and after sales service.

(A) in
(B) to
(C) as
(D) since

91. Refer the diagram shown left. Find out which one of the figures shown in the right would come in sequence



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

92. Sheela is facing towards the East. Turning to her right, she walks 10 meters. She then turns left and walks 5 meters. Next, she walks 7 meters to her right. Which direction is she facing now?

(A) North
(B) South
(C) East
(D) West

93. What is logically equivalent to "If Krishna and Padma go to the shopping mall then it is raining"?

(A) If it is raining then Krishna and Padma go to the shopping mall
(B) If it is not raining then Krishna and Padma do not go to the shopping mall
(C) If Krishna and Padma do not go to the shopping mall then it is not raining
(D) None of the above

94. Choose the alternative such that the known term bears the same relation to the unknown term represented by (?) in the second pair as the relation between the two terms in the first pair.
WAYLAY : AEIOUI :: LAYWAY : ?

(A) OUIAEI
(B) UAIOEI
(C) EOUIIA
(D) EOUIEA

95. Choose the alternative such that the known term bears the same relation to the unknown term represented by (?) in the second pair as the relation between the two terms in the first pair.
DALE : LEAD :: PALE : ?

(A) PEAL
(B) LEAP
(C) APEL
(D) ELAP

96. A crime has been committed with four people. You are responsible for finding out who did it. You have recorded the following statements from the four witnesses, and you know one of them has committed the crime.

(1) Abu says that Babu did it.
(2) Babu says that Abu did it.
(3) Chutty says that Babu is telling the truth.
(4) Dave says that Chutty is not lying.

You know that exactly three of the statements recorded are FALSE. Who committed the crime?

(A) Abu
(B) Babu
(C) Chutty
(D) Dave

97. **Refer to the information below and answer the question that follows -**
Anil, Milind, Kiran, Shehul and Rajesh are sitting around in a circular table. Kiran is immediate left to Rajesh. Anil is between Shehul and Rajesh.
Who is to the immediate left of Kiran ?

(A) Anil
(B) Milind
(C) Shehul
(D) Rajesh

98. **Refer to the information below and answer the question that follows -**
There are six friends Sachin, Vinay, Pratik, Ravi, Akshay and Prashant . Sachin is shorter than Vinay but taller than Ravi. Pratik is the tallest. Prashant is taller than Akshay and shorter than Ravi.
Who is the shortest?

(A) Sachin
(B) Ravi
(C) Prashant
(D) Akshay

99. **Refer to the information below and answer the question that follows -**

Six participants Vinit, Rishab, Jatin, Sagar, Ashish and Mohan have participated in racing. No two of them completed race at the same time. Vinit and Rishab have completed the race before Mohan. Ashish was last one to complete the race. Jatin completed race before Sagar and Sagar completed race just before Vinit.
Who completed the race just before Ashish ?

(A) Mohan
(B) Vinit
(C) Rishab
(D) cannot be determined

100. A 1 × 1 chessboard has one (1) square, a 2 × 2 chessboard has five (5) squares. Continuing along this fashion, what is the number of squares on the (regular) 8 × 8 chessboard?

(A) 64
(B) 65
(C) 144
(D) 204

101. Abra is Rambo's daughter. Shintu is Rambo's Sister. Shintu's daughter is called Cabra and Son is called Dabra. Limba is CAbra's maternal Aunt.
Cabra is Rambo's

(A) aunt
(B) nephew
(C) uncle
(D) niece

102. ' I am smart ' is coded as 'spjm okz pkj ' and ' I know everything ' is coded as 'sat zyk okz '. Which of the following could be the code of ' smart girls know everything '?

(A) pkj spjm gre ykz
(B) sat zyk spjm pkj
(C) sat gre cat pkj
(D) pkj cat zyk sat

103. IF ' REASON ' is coded as 5 and 'BELIEVED' as 7, then what is the code number for 'GOVERNMENT' ?

(A) 6
(B) 8

(C) 9
(D) 10

104. If (i) READ AND PLAY = DA RE LA
(ii) YOU NEVER READ = YU RE VE
(iii) YOU ALWAYS PLAY = AL YU LA
What are the codes for READ and PLAY?

(A) { DA, LA}
(B) { RE , LA}
(C) { DA , AL}
(D) { RE , YU}

105. The capacity of tap Y is 60% more than that of X. If both the taps are opened simultaneously, they take 40 hours to fill the tank. The time taken by Y alone to fill the tank is

(A) 64 hrs
(B) 65 hrs
(C) 75 hrs
(D) 76 hrs

106. The perimeter of a rectangle is 28 inches, and its area is x square inches. If x is an even integer, what is the greatest possible value of x?

(A) 24
(B) 40
(C) 42
(D) 48

Direction : In question below is given a statement followed by three courses of actions numbered I, II and III. Given that all the statements are true; decide which of the three given suggested courses of action logically follows for pursuing.

107. **A devastating earthquake have ravaged the city killing thousands of people and rendering many more homeless.**

I. The entry of outsiders into the city should be stopped immediately.
II. The civic administration should immediately make alternate temporary housing arrangements to the victims
III. The affected people should immediately shifted to safer place

(A) Only I follows
(B) Only II and III follow
(C) Only III follows
(D) Only either II or III follows

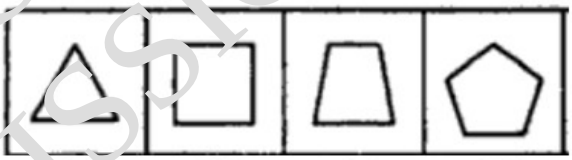
108. **Direction :** In question below is given a statement followed by three courses of actions numbered I, II and III. Given that all the statements are true, decide which of the three given suggested courses of action logically follows for pursuing.

The army has been alerted in the district following floods triggered by incessant rains

I. Relief to flood affected people should be arranged
II. Supply of food articles should be arranged
III. Adequate medical facilities should be arranged

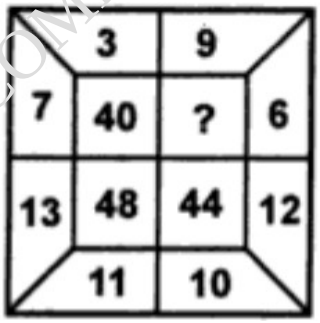
(A) Only I follows
(B) Only I and III follow
(C) All follow
(D) None follows

109. Refer the diagrams shown. Find the odd one out



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

110. Refer the diagram shown. The numbers shown follow a definite pattern. Find the missing number

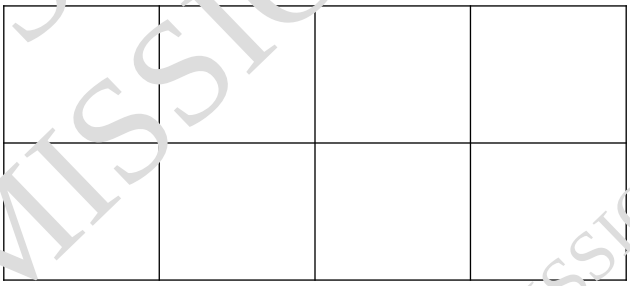


(A) 42
(B) 45
(C) 46
(D) 47

111. All hill stations have a lake. Ooty has two lakes.
Which of the statement(s) below is/are logically valid and can be inferred from the above sentences?
(i) Ooty is not a hill station
(ii) No hill station can have more than one lake

(A) (i) only
(B) (ii) only
(C) both (i) and (ii)
(D) neither (i) nor (ii)

112. In a 2 × 4 rectangle grid shown below, each cell is a rectangle. How many rectangles can be observed in the grid?



(A) 21
(B) 27
(C) 30
(D) 36

113. Indian currency notes show the denomination indicated in at least seventeen languages. If this is not an indication of the nation's diversity, nothing else is.
Which of the following can be logically inferred from the above sentences?

(A) India is a country of exactly seventeen languages.
(B) Linguistic pluralism is the only indicator of a nation's diversity.

(C) Indian currency notes have sufficient space for all the Indian languages.
(D) Linguistic pluralism is strong evidence of India's diversity.

114. Pick the odd one from the following options

(A) CADBE
(B) JHKIL
(C) XVYWZ
(D) ONPMQ

CUSAT COMMON ADMISSION TEST 2019
CUSAT COMMON ADMISSION TEST 2019

115. Among 150 faculty members in an institute, 55 are connected with each other through Facebook and 85 are connected through WhatsApp. 30 faculty members do not have Facebook or WhatsApp accounts. The number of faculty members connected only through Facebook accounts is

(A) 35
(B) 45
(C) 65
(D) 90

116. A dance programme is scheduled for 10.00 am. Some students are participating in the programme and they need to come an hour earlier than the start of the event. These students should be accompanied by a parent. Other students and parents should come in time for the programme. The instruction you think appropriate for this is

(A) Students should come at 9.00 am and parents should come at 10.00 am
(B) Participating students should come at 9:00 am accompanied by a parent, and others should come by 10:00 am
(C) Students who are not participating should come by 10:00 am and they should not bring their parents
(D) Participating students should come before 9:00 am. Parents who accompany them should come at 9:00 am. All others should come at 10:00 am

117. By the beginning of the 20th century, several hypotheses were being proposed, suggesting a paradigm shift in our understanding of the universe. However, the clinching evidence was provided by experimental measurements of the position of a star which was directly behind our Sun.

Which of the following inferences may be drawn from the above passage?
(i) Our understanding of the universe changes based on the positions of stars
(ii) Paradigm shifts usually occur at the beginning of centuries
(iii) Stars are important objects in the universe
(iv) Experimental evidence was important in confirming this paradigm shift

(A) (i) , (ii) and (iv)
(B) (iii) only
(C) (i) and (iv)
(D) (iv) only

118. Consider the following statements relating to the level of poker play of four players P, Q, R and S.

I. P always beats Q
II. R always beats S
III. S loses to P only sometimes
IV. R always loses to Q

Which of the following can be logically inferred from the above statements?

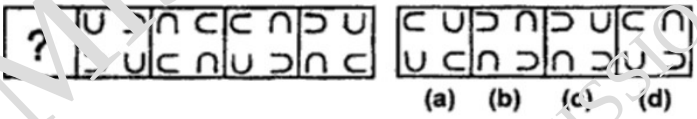
(i) P is likely to beat all the three other players
(ii) S is the absolute worst player in the set

(A) (i) only
(B) (ii) only
(C) (i) and (ii)
(D) neither (i) nor (ii)

119. Given the sequence of terms, AD CG FK JP , the next term is

(A) OV
(B) OW
(C) PV
(D) PW

120. Refer the diagram shown. Which figure would replace the question mark?



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

121. What is the output of the below program?

```
#include < stdio.h>
int main()
{
int i = 0;
switch ( i )
```

```
{
      case '0': printf("Hello");
             break;
      case '1': printf( "India");
              break;
      default: printf( " HelloIndia");
}
return 0;

}
```

(A) Hello
(B) India
(C) HelloIndia
(D) Compile-time-error

122. What does the following function do for a given Linked List with first node as *head* ?

```
void test1(struct node* head)
{
  if ( head == NULL)
    return;
    test1( head->next  );
    printf ( "%d  ", head->data  );

}
```

(A) Prints all nodes of linked lists
(B) Prints all nodes of linked list in reverse order
(C) Prints alternate nodes of linked list
(D) Prints alternate nodes in reverse order

123. What is printed by the following C program segment?

```
int a=40, b=25;
printf( "%d", a=b);
```

(A) 25
(B) 40
(C) 0
(D) Error message

124.
```
class A
{
      public:   void display( )
      {
      cout<<"A";
     }
};
class B : public A
{
      public :  void display( )
      {
      cout<<"B";
      }
};
main( )
{
      B  b;
      b.display( );
      b.A::display( );
      b.B::display( );
      return 0;
}
```

What is the output of the above program?

(A) A B A
(B) B A B
(C) B A A
(D) A A B

125. Consider the following C function.

```
float f ( float x, int y )
{
float p, s; int i ;
for ( s= 1, p = 1, i = 1 ; i < y ; i ++ )
{
p*  = x / i ;
s + = p;
}
return s ;
}
```

For large values of y, the return value of the function f best approximates

(A) x ^ y
(B) e ^ x
(C) ln (1 + x)
(D) x ^ x

126. What would be the output of the following piece of code?

```
main()
{
int i=3;
switch(i)
{
default: printf("Zero");
case 1: printf("One");
break;
case 2:printf("Two");
break;
case 3: printf("Three");
break;
}
}
```

(A) Zero
(B) One
(C) Two
(D) Three

127. Output of the following program fragment is

```
x=5;
y=x++;
     printf((“%d %d”,x,y);
```

(A) 5,6
(B) 5,5
(C) 6,5
(D) 6,6

128. What will be the output of the following C program segment?

```
Char  inChar = ‘A’ ;
switch (inChar ) {
case ‘A’ : printf (“Choice A\ n”) ;
case ‘B’ :
case ‘C’ : printf (“Choice B”);
case ‘D’ :
case ‘E’ :
default : printf (“No Choice”) ; }
```

(A) No choice
(B) Choice A
(C) Choice A
Choice B No choice
(D) Program gives no output as it is erroneous

129. What is the output finally printed by the following program segment?

```
#include<stdio.h>
main()
{
   int x = 7;
      if(x==7)
   {
       if(x==7) break;
       printf("Good");
   }
   printf("Morning");
}
```

(A) Compile error
(B) Morning
(C) GoodMorning
(D) Good

130. Consider the following program.

```
def brian(unsigned n):
     count = 0
     while(n!=0)
          n=n&(n-1)
          count = count + 1
     return count
```

(A) The program goes into infinite loop
(B) returns n
(C) returns n-1
(D) returns number of ones in the binary representation of n

131. Select the correct output of execution:

```
main()
{
float me = 1.1;
double you = 1.1;
if(me==you)
printf("This is same");
else
printf("Not equal");

}
```

(A) This is same
(B) Not equal
(C) This is same Not equal
(D) Error

132. What will be the output of execution of the following piece of code?

```
main()
{
static int var = 5;
printf("%d ",var--);
if(var)
main();
}
```

(A) Error
(B) Infinite loop
(C) 5 4 3 2 1
(D) 1 2 3 4 5

133. What will be the output of execution of the following piece of code?

```
main() {
char *p;
p="Hello";
printf("%c\n",*&*p);
}
```

(A) Hello
(B) H
(C) Some address
(D) Error

134. feof function checks for

(A) file opening error
(B) data error
(C) end of file
(D) file closing error

135. What will be the output of execution of the following piece of code?

```
void main() {
int i;
char a[]="\0";
if(printf("%s\n",a))
printf("Ok here \n");
else
printf("Forget it\n");
}
```

(A) NULL
(B) Ok here
(C) Forget it
(D) Error

136. What will be the output of execution of the following piece of code?

```
main()
{
int i=0;
for(;i++;printf("%d",i)) ;
printf("%d",i);
}
```

(A) 0
(B) 1
(C) Error
(D) 0,1

137. What will be the output of execution of the following piece of code?

```
#include <stdio.h>
int main()
{
int i=3;
switch (i)
{
case 1 : printf(" One " );
case 3 : printf( " Three");
default : printf("ood" ); break;
}
}
```

(A) One
(B) Three
(C) Threeodd
(D) Error

138. If the two strings are identical, then strcmp() function returns

(A) – 1
(B) 1
(C) 0
(D) Yes

139. Consider the following code fragment in the C programming language when run on a non-negative integer n.

```
int f(int n)
{
      if(n==0 || n==1)
            return 1;
      else
            return f(n-1) + f(n-2);
}
```

Assuming a typical implementation of the language, what is the running time of this algorithm and how does it compare to the optimal running time for this problem?

(A) This algorithm runs in polynomial time in n but the optimal running time is exponential in n
(B) This algorithm runs in exponential time in n and the optimal running time is exponential in n
(C) This algorithm runs in exponential time in n but the optimal running time is polynomial in n
(D) This algorithm runs in polynomial time in n and the optimal running time is polynomial in n

140. An unordered list contains n distinct elements. The minimum number of comparisons to find an element in this list that is neither maximum nor minimum is

(A) Θ (n log n)
(B) Θ (n)
(C) Θ (log n)
(D) Θ (1)

141. The value printed by the following program is _____ .

```
void f ( int* p, int m) {
     m = m + 5;
     *p = *p + m;
      return;
     }
      void main(){
      int i=5,  j=10;
      f ( &i,   j);
      printf ("%d",  i + j );

     }
```

(A) 3
(B) 15
(C) 30
(D) 12

142. Consider the following function.

```
void hello (int n)
{
     if (n>0)
     {
          printf("hello );
          hello n-1);
     }
printf("world");
}
```

If you run hello(n) for some non-negative integer n, what would it print?

(A) n times "hello", followed by n+1 times "world"
(B) n times "hello", followed by n times "world"
(C) n times "helloworld"
(D) n+1 time "helloworld"

143. What is the output of the following program?

```
float a  = 0.125, b = 0.7;
void main()
{
      if (a == 0.125) printf("1");
       else printf("2");
      if (b == 0.7) printf("1");
       else printf("2");
}
```

(A) 22
(B) 21
(C) 12
(D) 11

144. Suppose the three matrices A, B, and C (whose elements are integers) are compatible for multiplication and consider the following statements in C++, for computing A × B × C as (i) P = (A* B) * C; (ii) P = A* (B * C);

(A) The results and the time taken to produce the result are same
(B) The results are same, but time taken to produce the result may differ
(C) The results may differ because matrix multiplication is not commutative
(D) The results may differ because matrix multiplication is not associative

145. Assuming that the following C program fragment is syntactically correct, determine its output:

```
Int x = 152;
if (0 < x < 10) printf("1 - digit number");
else if (10 <= x < 100) printf("2 - digit number");
else if (100 <= x < 1000) printf("3 - digit number");
else if (1000 <= x < 10000) printf("4 - digit number");
```

(A) 1 - digit number
(B) 2 - digit number
(C) 3 - digit number
(D) 4 - digit number

146. A recursive implementation of the Fibonacci sequence is based on the following definition:

Fib(n)=n, if n ≤ 1.

Fib(n)=Fib(n-1)+Fib(n-2),if n ≤ 2.

The function:

```
int Fib(int n)/* calculate the nth term in a Fibonacci sequence */
{
      if((n == 0)||(n == 1))return n;
      else return Fib(n-2)+Fib(n-1);
}
```

Suppose that the routine were invoked to calculate Fib (4) (the 4th term), how many times would a recursive call of Fib (1) occur?

(A) Once
(B) Twice
(C) Three times
(D) Four times

147. Consider the statement **if** (x <= y) z = x + 2; **else** z = 2 * x;.

What is the condition that must hold *before* the execution of this statement if one wishes to be certain that *afterwards*, z = x + 2?

(A) $x \leq y$

(B) $x < y$

(C) $x \leq y$ or $x = 2$

(D) $x \neq y$

148. Consider the following C Program segment:

```
# include < stdio.h >
int main (  )
{
char s1 [7 ] = " 1234 " ,  *p;
p = s1 + 2;
*p = ' 0 ';
printf ( "  % s " , s1 ) ;
}
```

What will be printed by the program?

(A) 12
(B) 120400
(C) 1204
(D) 1034

149. Consider the preprocessor directive: `#define SQUARE(n)  n* n`
Determine the output of the following C statement:

```
printf("%d",SQUARE(2 + 3));
```

(A) 11
(B) 13
(C) 25
(D) 7

150. What does the following declaration mean?
`int (*ptr)[10];`

(A) ptr is array of pointers to 10 integers
(B) ptr is a pointer to an array of 10 integers
(C) ptr is an array of 10 integers
(D) ptr is an pointer to array

M.VOC MOBILE PHONE APPLICATION DEVELOPMENT - ANSWER KE

TEST CODE: 621

QN. NO.	KEY	QN. NO.	KEY	QN. NO.	KEY	QN. NO.	KEY	QN. NO.	KEY
1	B	26	C	51	A	76	C	101	D
2	A	27	C	52	B	77	D	102	D
3	A	28	B	53	C	78	A	103	C
4	D	29	D	54	B	79	C	104	B
5	C	30	A	55	C	80	D	105	B
6	C	31	A	56	A	81	A	106	D
7	A	32	C	57	D	82	C	107	B
8	B	33	A	58	A	83	A	108	C
9	A	34	A	59	B	84	D	109	C
10	D	35	C	60	C	85	B	110	B
11	B	36	D	61	C	86	B	111	D
12	A	37	D	62	A	87	B	112	C
13	C	38	A	63	D	88	D	113	D
14	C	39	B	64	A	89	A	114	D
15	C	40	B	65	D	90	A	115	A
16	C	41	A	66	B	91	C	116	B
17	A	42	B	67	A	92	B	117	D
18	B	43	B	68	B	93	B	118	D
19	A	44	B	69	B	94	A	119	A
20	B	45	B	70	C	95	B	120	D
21	D	46	C	71	A	96	B	121	C
22	A	47	B	72	C	97	B	122	B
23	C	48	D	73	B	98	D	123	A
24	D	49	C	74	A	99	A	124	B
25	C	50	B	75	B	100	D	125	B

EY

QN. NO.	KEY
126	D
127	C
128	C
129	A
130	D
131	B
132	C
133	B
134	C
135	B
136	B
137	C
138	C
139	C
140	D
141	C
142	A
143	C
144	B
145	B
146	C
147	C
148	C
149	A
150	B