National Testing Agency

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Computer and system science

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PART A

Section Id :	128206255
Section Number :	1
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	75
Number of Questions to be attempted:	75
Section Marks:	100
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	128206406
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 1282069033 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consider a B+ tree in which the maximum number of keys in a node is 5. What is the minimum number of keys in a non-root node?

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

Options :

12820635731. A

12820635732. B

12820635733. C

12820635734. D

Question Number : 2 Question Id : 1282069034 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following sorting algorithm has the lowest worst case complexity?

(a) Merge sort
(b) Bubble sort
(c) Quick Short
(d) Selection Sort

Options :

12820635735. A

12820635736. B

12820635737. C

12820635738. D

Question Number : 3 Question Id : 1282069035 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The postfix expression for the infix expression A + B * (C + D) / F + D * E is

(a) AB + CD + *F / D + E *
(b) ABCD + *F / + DE* +
(c) A*B + CD / F*DE ++
(d) A + *BCD / F*DE ++

Options :

12820635739. A

12820635740. B

12820635741. C

12820635742. D

Question Number : 4 Question Id : 1282069036 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consider the process of inserting an element into a Max Heap, where the Max Heap is represented by an array. Suppose, we perform binary search on the path from the new leaf to the root for finding the position of newly inserted element, the number of comparisons performed is

(a) $O(\log_2 n)$
(b) $O(\log_2 \log_2 n)$
(c) $O(n)$
(d) $O(n \log_2 n)$

Options :

12820635743. A

12820635744. B

12820635745. C

12820635746. D

Question Number : 5 Question Id : 1282069037 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The following program

```
main ()
{ printf("%u", main);}
```

is

(a) printing a garbage number

(b) giving an execution error

(c) printing of starting address of the main function

(d) having an infinite loop

Options :

12820635747. A

12820635748. B

12820635749. C

12820635750. D

Question Number : 6 Question Id : 1282069038 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consider the following program fragment

```
int v =3, *pv =&v;
printf("%d, %d", v, *pv);
```

The output will be

(a) an error message

(b) 3, address of v

(c) 3, 3

(d) None of above

Options :

12820635751. A

12820635752. B

12820635753. C

12820635754. D

Question Number : 7 Question Id : 1282069039 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consider the following program fragment

```
int a=5, *b = &a;
printf("%d", a * b);
```

The output is:

(a) 25
(b) garbage
(c) 5 x address of b
(d) an error message

Options :

12820635755. A

12820635756. B

12820635757. C

12820635758. D

Question Number : 8 Question Id : 1282069040 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The operation of a staircase switch best explains the

(a) or operation
(b) and operation
(c) exclusive nor operation
(d) exclusive or operation

Options :

12820635759. A

12820635760. B

12820635761. C

12820635762. D

Question Number : 9 Question Id : 1282069041 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The only state transition that is initiated by the user process itself is

(a) block
(b) dispatch
(c) wakeup
(d) None of the above

Options :

12820635763. A

12820635764. B

12820635765. C

12820635766. D

Question Number : 10 Question Id : 1282069042 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the correct matching for the following pairs?

(A) Disk Scheduling	(I) Round robin
(B) Batch Processing	(II) SCAN
(C) Time sharing	(III) LIFO
(D) Interrupt Processing	(IV) FIFO

(a) A-III, B-IV, C-II, and D-I
(b) A-IV, B-III, C-II, and D-I
(c) A-II, B-IV, C-I, and D-III
(d) A-II, B-I, C-IV, and D-III

Options :
12820635767. A
12820635768. B
12820635769. C
12820635770. D

Question Number : 11 Question Id : 1282069043 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A system has 3 processes and is sharing 4 resources. If each process needs a maximum of 2 units then, deadlock

(a) can never occur
(b) may occur
(c) has to occur
(d) all of the above

Options :
12820635771. A
12820635772. B
12820635773. C
12820635774. D

Question Number : 12 Question Id : 1282069044 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A process refers to 5 pages, A, B, C, D and E in the order A→B→C→D→A→B→E→A→B→C→D→E. If the page replacement algorithm is FIFO, the number of pages transfers with an empty internal store of 3 frames are:

(a) 8
(b) 10
(c) 9
(d) 7

Options :
12820635775. A

12820635776. B

12820635777. C

12820635778. D

Question Number : 13 Question Id : 1282069045 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In an entity relationship, y is the dominant entity and x is the subordinate entity. Which of the following is a correct statement?

(a) Operationally, if y is deleted, so is x

(b) Operationally, if x is deleted, so is y

(c) Operationally, if x is deleted, y remains the same

(d) x is existence dependent on y

Options :

12820635779. A

12820635780. B

12820635781. C

12820635782. D

Question Number : 14 Question Id : 1282069046 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Given the functional dependencies

$$X \rightarrow W; X \rightarrow Y; X \rightarrow Z; Z \rightarrow PQ$$

Which of the following does not hold?

(a) $X \rightarrow Z$

(b) $X \rightarrow WY$

(c) $W \rightarrow Z$

(d) None of the above

Options :

12820635783. A

12820635784. B

12820635785. C

12820635786. D

Question Number : 15 Question Id : 1282069047 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If P and Q are predicates and P is the relational algebra expression, then which of the following equivalences are not valid?

(a) $\sigma_P\left(\sigma_Q(e)\right) \neq \sigma_Q(\sigma_P(e))$

(b) $\sigma_P\left(\sigma_Q(e)\right) = \sigma_{P \wedge Q}(e)$

(c) $\sigma_P\left(\sigma_Q(e)\right) = \sigma_Q(\sigma_P(e))$

(d) $\sigma_Q(\sigma_P(e)) = \sigma_{P \wedge Q}(e)$

Options :

12820635787. A

12820635788. B

12820635789. C

12820635790. D

Question Number : 16 Question Id : 1282069048 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which one of the following statements is false?

(a) Any relation with two attributes is in BCNF

(b) Any relation in which every key has only one attribute is in 2NF

(c) A prime attribute can be transitively dependent on a key in a 3NF relation

(d) A prime attribute can be transitively dependent on a key in a BCNF relation

Options :

12820635791. A

12820635792. B

12820635793. C

12820635794. D

Question Number : 17 Question Id : 1282069049 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$(100000)_2$ in Hexadecimal is:

(a) 10

(b) 20

(c) 80

(d) 100

Options :

12820635795. A

12820635796. B

12820635797. C

12820635798. D

Question Number : 18 Question Id : 1282069050 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If negative numbers are stored in 2's complement form, the range of numbers that can be stored in 8 bits is

(a) -128 to + 128

(b) -127 to +128

(c) -128 to +127

(d) -127 to +127

Options :

12820635799. A

12820635800. B

12820635801. C

12820635802. D

Question Number : 19 Question Id : 1282069051 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is the minimum error code?

(a) Octal code

(b) Binary Code

(c) Gray Code

(d) Excess -3 code

Options :

12820635803. A

12820635804. B

12820635805. C

12820635806. D

Question Number : 20 Question Id : 1282069052 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Microprogram is

(a) the name of a source program in microcomputer

(b) a primitive form of macros used in assemble language programming

(c) a program of very small size

(d) the set of instructions indicating the primitive operations in a system

Options :

12820635807. A

12820635808. B

12820635809. C

12820635810. D

Question Number : 21 Question Id : 1282069053 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

How many flip-fop circuit are needed to divide by 16?

(a) 2
(b) 4
(c) 8
(d) 16

Options :

12820635811. A

12820635812. B

12820635813. C

12820635814. D

Question Number : 22 Question Id : 1282069054 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Let A be a set having 'n' elements. The number of binary operations that can be defined on A is:

(a) n^{n^2}
(b) 2^{n^n}
(c) n^{2^n}
(d) 2^{2^n}

Options :

12820635815. A

12820635816. B

12820635817. C

12820635818. D

Question Number : 23 Question Id : 1282069055 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following logic families is well suited for high speed operation?

(a) TTL
(b) ECL
(c) MOS
(d) CMOS

Options :

12820635819. A

12820635820. B

12820635821. C

12820635822. D

Question Number : 24 Question Id : 1282069056 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

You need 500 subnets, each with about 100 usable host addresses per subnet. What mask will you assign using a Class B network address?

(a) 255.255.255.252

(b) 255.255.255.128

(c) 255.255.255.0

(d) 255.255.254.0

Options :

12820635823. A

12820635824. B

12820635825. C

12820635826. D

Question Number : 25 Question Id : 1282069057 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is route poisoning?

(a) It sends back the protocol received from a router as a poison pill, which stop the regular updates

(b) It is information received from a router that can not be sent back to the originating router

(c) It prevent regular update message from reinstating a route that has just come up.

(d) It describes when a router sets metrics for a downed link to infinity

Options :

12820635827. A

12820635828. B

12820635829. C

12820635830. D

Question Number : 26 Question Id : 1282069058 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the smiley (emoticons)used for "Big nose" in E-mail?

(a) :-)

(b) ;-)

(c) :+)

(d) <:-)

Options :

12820635831. A

12820635832. B

12820635833. C

12820635834. D

Question Number : 27 Question Id : 1282069059 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the multiplexing techniques used by SONET:

(a) FDM
(b) WWDM
(c) TDM
(d) DWDM

Options :

12820635835. A

12820635836. B

12820635837. C

12820635838. D

Question Number : 28 Question Id : 1282069060 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following modes are valid when a switch port is used as a VLAN trunk?

(a) Blocking
(b) Desirable
(c) Transparent
(d) Learning

Options :

12820635839. A

12820635840. B

12820635841. C

12820635842. D

Question Number : 29 Question Id : 1282069061 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Consider the set of real numbers with the binary relation $R = \{(i,j) : ij \leq 0\}$. Which one of the following statements about R is true?

(a) R is reflexive
(b) R is symmetric
(c) R is transitive
(d) None of the above

Options :

12820635843. A

12820635844. B

12820635845. C

12820635846. D

Question Number : 30 Question Id : 1282069062 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which one of the following is a cyclic group?

(a) Rational numbers under addition

(b) nth roots of unity under multiplication

(c) Non-zero real numbers under multiplication

(d) Complex numbers under addition

Options :

12820635847. A

12820635848. B

12820635849. C

12820635850. D

Question Number : 31 Question Id : 1282069063 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The number of relations on a set with n elements which are reflexive is

(a) 2^{n^2}

(b) $2^{n(n+1)/2}$

(c) $2^{n(n-1)/2}$

(d) 2^{n^2-n}

Options :

12820635851. A

12820635852. B

12820635853. C

12820635854. D

Question Number : 32 Question Id : 1282069064 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is a graph that is acyclic but not connected?
(a) Tree

(b) Forest

(c) Spanning Tree

(d) None of the above

Options :
12820635855. A
12820635856. B
12820635857. C
12820635858. D

Question Number : 33 Question Id : 1282069065 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The minimum time delay between the initiations of two independent memory operations is called
(a) access time

(b) cycle time

(c) transfer rate

(d) latency time

Options :
12820635859. A
12820635860. B
12820635861. C
12820635862. D

Question Number : 34 Question Id : 1282069066 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The number of errors in the following shell script is/are

```
echo How are you?
read $ answer
```

(a) 0
(b) 1
(c) 2
(d) 3

Options :
12820635863. A
12820635864. B
12820635865. C
12820635866. D

Question Number : 35 Question Id : 1282069067 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Let [x] denote the greatest integer function of x. Then what is the value of the integral $\int_0^2 [x^2]\, dx$?

(a) $8/3$

(b) $3 - 2\sqrt{2}$

(c) $6 - 3\sqrt{3}$

(d) $5 - \sqrt{2} - \sqrt{3}$

Options :

12820635867. A

12820635868. B

12820635869. C

12820635870. D

Question Number : 36 Question Id : 1282069068 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Let $y\sqrt{x^2+1} = \log(\sqrt{x^2+1} - x)$. Then the derivative $\frac{dy}{dx}$ is given by

(a) $\frac{xy+1}{x^2+1}$

(b) $-\frac{xy+1}{x^2+1}$

(c) $\frac{xy+1}{\sqrt{x^2+1}}$

(d) $-\frac{xy+1}{\sqrt{x^2+1}}$

Options :

12820635871. A

12820635872. B

12820635873. C

12820635874. D

Question Number : 37 Question Id : 1282069069 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of these options is the correct value of the indefinite integral $\int \sec(x)\, dx$?

(a) $\log(\cos x) + C$

(b) $\log(\sec x + \tan x) + C$

(c) $\log|\cos x| + C$

(d) $\log|\sin x + \tan x| + C$

Options :

12820635875. A

12820635876. B

12820635877. C

12820635878. D

Question Number : 38 Question Id : 1282069070 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the value of $\lim_{x \to 0}(\tan x - x - \frac{1}{3}x^3)/x^5$?

(a) 2/15

(b) 1/24

(c) 1/120

(d) ∞

Options :

12820635879. A

12820635880. B

12820635881. C

12820635882. D

Question Number : 39 Question Id : 1282069071 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The order of $\begin{pmatrix} 0 & -1 \\ 1 & 0 \end{pmatrix}$ in the multiplicative group of invertible 2x2 matrices is:

(a) 1

(b) 2

(c) 4

(d) 8

Options :

12820635883. A

12820635884. B

12820635885. C

12820635886. D

Question Number : 40 Question Id : 1282069072 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Let a, b be arbitrary elements of an abstract group G. Which of the following statements is always TRUE in general?

(a) $a\,b = b\,a$

(b) $a\,b \neq b\,a$

(c) $(a\,b)^{-1} = b^{-1}\,a^{-1}$

(d) $(a\,b)^{-1} = a^{-1}\,b^{-1}$

Options :

12820635887. A

12820635888. B

12820635889. C

12820635890. D

Question Number : 41 Question Id : 1282069073 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following sets is a subgroup of the multiplicative group of non-zero real numbers?

(a) Positive real numbers

(b) Non-negative real numbers

(c) Positive integers

(d) Non-negative rational numbers

Options :

12820635891. A

12820635892. B

12820635893. C

12820635894. D

Question Number : 42 Question Id : 1282069074 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The remainder obtained after $x^5 + x + 1$ is divided by $x^2 + x + 1$ is:

(a) 1

(b) x

(c) $x + 1$

(d) 0

Options :

12820635895. A

12820635896. B

12820635897. C

12820635898. D

Question Number : 43 Question Id : 1282069075 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Given that a 200×100 matrix has rank 10, its nullity is:

(a) 90

(b) 110

(c) 210

(d) 190

Options :

12820635899. A

12820635900. B

12820635901. C

12820635902. D

Question Number : 44 Question Id : 1282069076 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The rank of any general 300×100 matrix cannot be greater than

(a) 1

(b) 100

(c) 200

(d) 300

Options :

12820635903. A

12820635904. B

12820635905. C

12820635906. D

Question Number : 45 Question Id : 1282069077 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The number of solutions of $\begin{pmatrix} 1 & 2 & 3 \\ 0 & 4 & 5 \\ 2 & 4 & 6 \end{pmatrix} x = \begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix}$ is

(a) 0

(b) 1

(c) Infinite

(d) None of the above

Options :

12820635907. A

12820635908. B

12820635909. C

12820635910. D

Question Number : 46 Question Id : 1282069078 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Clockwise rotation by 45° in the two dimensional plane is given by

(a) $\begin{pmatrix} 0 & 1 \\ -1 & 0 \end{pmatrix}$

(b) $\begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$

(c) $\begin{pmatrix} \frac{1}{\sqrt{2}} & -\frac{1}{\sqrt{2}} \\ \frac{1}{\sqrt{2}} & \frac{1}{\sqrt{2}} \end{pmatrix}$

(d) $\begin{pmatrix} \frac{1}{\sqrt{2}} & \frac{1}{\sqrt{2}} \\ -\frac{1}{\sqrt{2}} & \frac{1}{\sqrt{2}} \end{pmatrix}$

Options :

12820635911. A

12820635912. B

12820635913. C

12820635914. D

Question Number : 47 Question Id : 1282069079 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of these is NOT the name of a method to compute a numerical solution of ODEs?

(a) Euler
(b) Simpson
(c) Runge-Kutta
(d) Milne

Options :

12820635915. A

12820635916. B

12820635917. C

12820635918. D

Question Number : 48 Question Id : 1282069080 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of these has the fastest speed of convergence to the root of a polynomial equation?

(a) Newton-Raphson
(b) Regula-falsi
(c) Secant
(d) Bisection

Options :

12820635919. A

12820635920. B

12820635921. C

12820635922. D

Question Number : 49 Question Id : 1282069081 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Peta is a prefix to denote multiplication by 2 to the power of

(a) 20
(b) 30
(c) 40
(d) 50

Options :

12820635923. A

12820635924. B

12820635925. C

12820635926. D

Question Number : 50 Question Id : 1282069082 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The worst case running time of Bubble sort is

(a) O(n)
(b) O(log n)
(c) $O(n^2)$
(d) O(n log n)

Options :

12820635927. A

12820635928. B

12820635929. C

12820635930. D

Sub-Section Number:	2
Sub-Section Id:	128206407
Question Shuffling Allowed :	Yes

Question Number : 51 Question Id : 1282069083 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following is not a general objective of research?

(a) To gain familiarity with a phenomenon
(b) To describe characteristics of a particular individual, group, or situation
(c) To make decision to determine the policies
(d) To test a hypothesis of a causal relationship between variables

Options :

12820635931. A

12820635932. B

12820635933. C

12820635934. D

Question Number : 52 Question Id : 1282069084 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Research related to survey and fact-finding enquiries of different kind is called

(a) Descriptive research
(b) Analytical research
(c) Conceptual research
(d) Fundamental research

Options :

12820635935. A

12820635936. B

12820635937. C

12820635938. D

Question Number : 53 Question Id : 1282069085 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The research approach that involves construction of an artificial environment within which relevant information and data can be generated is called

(a) Experimental approach
(b) Inferential approach
(c) Qualitative approach
(d) Simulation approach

Options :

12820635939. A

12820635940. B

12820635941. C

12820635942. D

Question Number : 54 Question Id : 1282069086 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Non-probabilistic sampling is also known as

(a) Judgement sampling
(b) Artificial sampling
(c) Inconvenience sampling
(d) Random sampling

Options :

12820635943. A

12820635944. B

12820635945. C

12820635946. D

Question Number : 55 Question Id : 1282069087 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following is not a formal experimental design?

(a) Randomized block design
(b) Factorial design
(c) Latin square design
(d) Latin cubic design

Options :

12820635947. A

12820635948. B

12820635949. C

12820635950. D

Question Number : 56 Question Id : 1282069088 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following is not part of research design?

(a) Sampling design
(b) Judgement design
(c) Operational design
(d) Observational design

Options :

12820635951. A

12820635952. B

12820635953. C

12820635954. D

Question Number : 57 Question Id : 1282069089 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following is not a group of research methods?
(a) Methods that are used for collection of data
(b) Methods that are used for establishing relationships between the data and unknowns
(c) Methods that are used to evaluate the accuracy of the results obtained
(d) Methods that are used in publishing research

Options :
12820635955. A
12820635956. B
12820635957. C
12820635958. D

Question Number : 58 Question Id : 1282069090 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

Which of the following is not a part of research process?
(a) Hypothesis testing
(b) Sample design
(c) Reviewing of research articles
(d) Literature survey

Options :
12820635959. A
12820635960. B
12820635961. C
12820635962. D

Question Number : 59 Question Id : 1282069091 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

Independent variables that are not part of the study, but may affect the dependent variable are termed as
(a) Control variables
(b) Extraneous variables
(c) Confounded variables
(d) Internal variables

Options :
12820635963. A
12820635964. B
12820635965. C
12820635966. D

Question Number : 60 Question Id : 1282069092 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

Predictive statement that relates an independent variable to a dependent variable is called
(a) Research hypothesis
(b) Research proposition
(c) Research predicate
(d) Research principle

Options :
12820635967. A
12820635968. B
12820635969. C
12820635970. D

Question Number : 61 Question Id : 1282069093 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

Which of the following is not a basic principle of experimental design?
(a) Principle of Replication
(b) Principle of Randomization
(c) Principle of Error control
(d) Principle of Local control

Options :
12820635971. A
12820635972. B
12820635973. C
12820635974. D

Question Number : 62 Question Id : 1282069094 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

In an experimental hypothesis testing when a group is exposed to usual conditions, it is known as
(a) Experimental group
(b) Control group
(c) Special group
(d) Usual group

Options :
12820635975. A
12820635976. B
12820635977. C
12820635978. D

Question Number : 63 Question Id : 1282069095 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

Replication in experimental design is introduced
(a) To increase the protection against the effects of extraneous factors
(b) To increase the standard deviation of the study
(c) To increase the consistency of study
(d) To increase the precision of a study

Options :

12820635979. A

12820635980. B

12820635981. C

12820635982. D

Question Number : 64 Question Id : 1282069096 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Sampling error does not include
(a) Frame error
(b) Chance error
(c) Data collection error
(d) Response error

Options :

12820635983. A

12820635984. B

12820635985. C

12820635986. D

Question Number : 65 Question Id : 1282069097 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Any characteristic or Measure of population is known as
(a) Parameter
(b) Statistic
(c) Estimate
(d) Approximation

Options :

12820635987. A

12820635988. B

12820635989. C

12820635990. D

Question Number : 66 Question Id : 1282069098 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following is the correct statement?
(a) Sampling error is directly related to sample size
(b) Sampling error is not related to sample size
(c) Sampling error inversely related to sample size
(d) Sampling error is multiple of sample size

Options :
12820635991. A
12820635992. B
12820635993. C
12820635994. D

Question Number : 67 Question Id : 1282069099 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

Research methodology is a
(a) way to systematically perform research operations
(b) way to systematically carry out the research
(c) way to systematically publish the research work
(d) way to systematically analyse the results of the research

Options :
12820635995. A
12820635996. B
12820635997. C
12820635998. D

Question Number : 68 Question Id : 1282069100 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

Which of the following is not an informal experimental design?
(a) Before-and-after without control
(b) Before-and-after with control
(c) Before-only with control
(d) After-only with control

Options :
12820635999. A
12820636000. B
12820636001. C
12820636002. D

Question Number : 69 Question Id : 1282069101 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

For a population with population variance σ_P^2, and a sample with sample variance σ_S^2, the statistic used for performing the χ^2-test to test $H_0: \sigma_P^2 = \sigma_S^2$ is computed by

(a) $\chi^2 = \sigma_S^2/\sigma_P^2$

(b) $\chi^2 = (n-1)\sigma_S^2/\sigma_P^2$

(c) $\chi^2 = \sigma_S^2/(n\,\sigma_P^2)$

(d) $\chi^2 = n\,\sigma_S^2/\sigma_P^2$

Options :

12820636003. A

12820636004. B

12820636005. C

12820636006. D

Question Number : 70 Question Id : 1282069102 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

In an examination, a student scores 4 marks for every correct answer and loses 1 mark for every wrong answer. If he/she attempts all 75 questions and obtains 125 marks, how many questions does he/she attempt correctly?

(a) 35

(b) 38

(c) 40

(d) 42

Options :

12820636007. A

12820636008. B

12820636009. C

12820636010. D

Question Number : 71 Question Id : 1282069103 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

There are five different houses, A to E, in a row. A is to the right of B and E is to the left of C and right of A. B is to the right of D. Which of the houses is in the middle?

(a) A

(b) D

(c) B

(d) E

Options :

12820636011. A

12820636012. B

12820636013. C

12820636014. D

Question Number : 72 Question Id : 1282069104 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

If the first ten letters of the alphabet are written in the reverse order, followed by the rest of the alphabet from left to right, which of the following letters will be the 7th to the left of the 12th letter from the right?

(a) B

(b) H

(c) C

(d) I

Options :

12820636015. A

12820636016. B

12820636017. C

12820636018. D

Question Number : 73 Question Id : 1282069105 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

If every alternate letter starting from B of the alphabet are written in small letters and the rest are written in capital letters, how will "computer" be written?

(a) COMpUtEr

(b) COmputEr

(c) CoMPUtEr

(d) COmPuTEr

Options :

12820636019. A

12820636020. B

12820636021. C

12820636022. D

Question Number : 74 Question Id : 1282069106 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which one of the following interchange of operations will make the equation $12 \div 2 - 6 \times 3 + 8 = 16$ correct?

(a) $+$ and $\times$

(b) $+$ and $\div$

(c) $+$ and $-$

(d) $\div$ and $\times$

Options :

12820636023. A

12820636024. B

12820636025. C

12820636026. D

Question Number : 75 Question Id : 1282069107 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The probability $P(|X - \mu| \leq 2\sigma)$ where X is a random variable following Normal distribution with mean μ and variance σ^2 is approximately:

(a) 0.65

(b) 0.95

(c) 0.99

(d) 1

Options :

12820636027. A

12820636028. B

12820636029. C

12820636030. D