1) What will be the output of the following code segment written in C++?

```
#include<iostream>
using namespace std;
int main()
{
   int a = 200, b = 400;
        int *p=&a, *q=&b;     //&a=6543  &b=9654
        p = q;
cout<<"p="<<*p;
cout<<"q="<<*q;
}
```

[Question ID = 11276]

1. p=400, q=400

   [Option ID = 45101]
2. p=400, q=200

   [Option ID = 45102]
3. p=200, q=200

   [Option ID = 45103]
4. p=200, q=400

   [Option ID = 45104]

2) What will be the output of the following code segment written in C++?

```
#include <iostream>
#include<string.h>
using namespace std;
int main()
{
    char *ptr;
    int l;
    char Str[] = "COMPUTER";

    ptr = Str;
    l=strlen(Str);
    for (int i=0;i<=l-1;i++)
     Str[i]++;
    cout << ptr;
    return 0;
}
```

[Question ID = 11277]

1. COMPUTER

   [Option ID = 45105]
2. DPNQVUFS

   [Option ID = 45106]
3. RETUPMOC

   [Option ID = 45107]
4. DOMPUTER

   [Option ID = 45108]

3) Which of the following statements about 'new' in C++ are true?

(i) new is a function

(ii) new is an operator

(iii) new returns a void pointer

(iv) new calls the constructor

[Question ID = 11278]

1. i and iii

    [Option ID = 45109]
2. ii, iii and iv

    [Option ID = 45110]
3. ii and iv

    [Option ID = 45111]
4. i, iii and iv

    [Option ID = 45112]

4) All classes in Java are derived from _____ .[Question ID = 11279]

1. java.lang.System [Option ID = 45113]
2. java.lang.String [Option ID = 45114]
3. java.lang.Class [Option ID = 45115]
4. java.lang.Object [Option ID = 45116]

5) What will be the output of the following code segment written in Java?

```
class Test1
{
    public static void main(String [] args)
    {
        int x=88;
        String ans = "www";
        ans= (x < 75)? "xxx": (x <=100)? "yyy": "zzz";
        System.out.println(ans);
    }
}
```

[Question ID = 11280]

1. xxx

    [Option ID = 45117]
2. yyy

    [Option ID = 45118]
3. zzz

    [Option ID = 45119]
4. www

    [Option ID = 45120]

6) What will be the output of the following code segment written in Java?

```
class Test2
{
    public static void main(String [] args)
    {
        int a = 10 | 5;
        int b = a ^ 5;
        System.out.println(b & 7);
    }
}
```

[Question ID = 11281]

1. 2

    [Option ID = 45121]
2. 4

    [Option ID = 45122]
3. 6

    [Option ID = 45123]
4. 7

    [Option ID = 45124]

7) We have a channel with a 2-MHz bandwidth. Given that the SNR for this channel is 31, what is the theoretical channel capacity?[Question ID = 11282]

1. 6 Mbps [Option ID = 45125]
2. 8 Mbps [Option ID = 45126]
3. 10 Mbps [Option ID = 45127]
4. 12 Mbps [Option ID = 45128]

8) Identify the CRC (Cyclic Redundancy Check) code word that is generated for the message x^4+x^2+1 using the generator polynomial x^3+x^2+1.[Question ID = 11283]

1. 10101101 [Option ID = 45129]
2. 10101011 [Option ID = 45130]
3. 10101110 [Option ID = 45131]
4. 10101111 [Option ID = 45132]

9) What is the first address in the block if one of the addresses is 190.125.84.24/20?[Question ID = 11284]
1. 190.120.84.255 [Option ID = 45133]
2. 190.125.80.0 [Option ID = 45134]
3. 190.125.84.0 [Option ID = 45135]
4. 190.125.95.255 [Option ID = 45136]

10) The post fix form of the following expression A*B+A*(B*D+C*E) is _____ .[Question ID = 11285]
1. AB*A+BD*CE**+ [Option ID = 45137]
2. AB*AB+D*CE**+ [Option ID = 45138]
3. AB*ABD*CE*+*+   [Option ID = 45139]
4. ABAB*+D*CE**+ [Option ID = 45140]

11) Simplification of the following K-map in Sum-of-Product form is: (B ⊕ D)' + Z
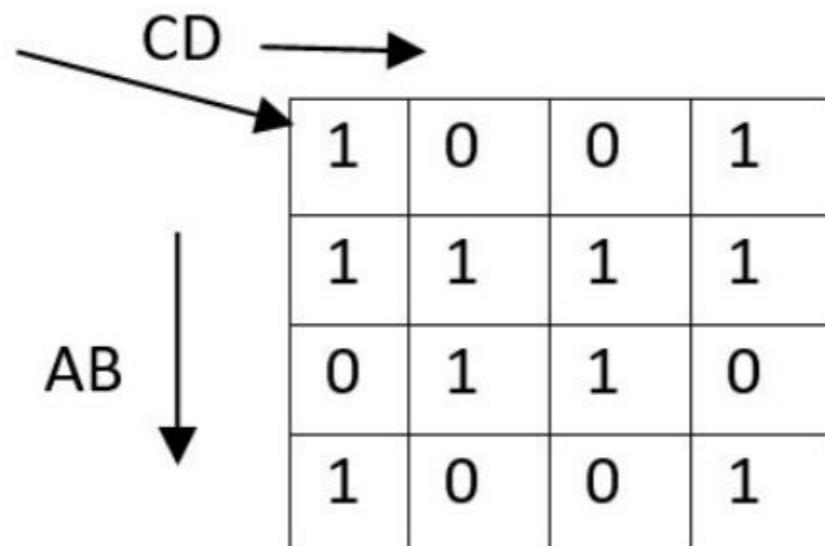
The value of Z is _____ .[Question ID = 11286]
1. A'B ONLY [Option ID = 45141]
2. A'D' ONLY [Option ID = 45142]
3. A'B' ONLY [Option ID = 45143]
4. A'B OR A'D'   [Option ID = 45144]

12) A C I D property in DBMS stands for _____ .[Question ID = 11287]
1. Atomicity, Continuity, Integrity, Distributed [Option ID = 45145]
2. Atomicity, Consistency, Integrity, Distributed [Option ID = 45146]
3. Authenticity, Consistency, Isolation, Distributed [Option ID = 45147]
4. Atomicity, Consistency, Isolation, Durability [Option ID = 45148]

13) Match List I with List II

List I	List II
A. WEAK ENTITY	I. DDL
B. RENAME	II. DCL
C. REVOKE	III. DML
D. INSERT	IV. ERD
E. GRANT	

Choose the correct answer from the options given below:

[Question ID = 11288]
1. A - I, B - II, C - III, D - IV, E - IV [Option ID = 45149]
2. A - II, B - III, C - III, D - I, E - IV [Option ID = 45150]
3. A - IV, B - I, C - II, D - III, E - II [Option ID = 45151]
4. A - II, B - II, C - III, D - I, E - IV [Option ID = 45152]

14) Alpha and Beta testing are forms of _____.[Question ID = 11289]
1. Acceptance testing [Option ID = 45153]
2. System testing [Option ID = 45154]
3. Integration testing [Option ID = 45155]
4. Unit testing [Option ID = 45156]

15) A hash table can store a maximum of 10 records and uses the hash function h(x) = x mod 10. Currently there are records in location 0, 2, 3, 6, 7, 8, 9. If collisions are resolved by linear probing, the probability of a new record going into location 1 is _____ .[Question ID = 11290]
1. 0.1 [Option ID = 45157]
2. 0.6 [Option ID = 45158]
3. 0.2 [Option ID = 45159]

4. 0.5 [Option ID = 45160]

16) What is the purpose of the following function when it is called for a linked list with *head* as the first *node*?

```
void traverse(struct node* head)
{
  if(head->next  == NULL)
   return;

  traverse(head->next);
  printf ("%d  ", head->data);
}
```

[Question ID = 11291]

1. It prints the data of all nodes of the linked list.

   [Option ID = 45161]
2. It prints the data of alternate nodes of the linked list in reverse order.

   [Option ID = 45162]
3. It prints the data of all nodes but the last node of the linked list in reverse order.

   [Option ID = 45163]
4. It prints the data of all nodes of the linked list in reverse order.

   [Option ID = 45164]

17) Following is an incorrect pseudocode for the algorithm which is supposed to determine whether a sequence of parentheses is balanced:

```
Stack S;
while (there are more characters in the input)
{
  read a character x;
  if ( x == '(' )
    Push(S, x)
  else if ( x ==  ')' and the stack is not empty )
    Pop(S)
  else
    print "unbalanced" and exit
 }
 print "balanced"
```

For which of the following unbalanced sequence of parenthesis does the above code print "balanced"?

[Question ID = 11292]

1. ())(()

   [Option ID = 45165]
2. ((()

   [Option ID = 45166]
3. (()())

   [Option ID = 45167]
4. (())()

   [Option ID = 45168]

18) In a binary search tree, let node(a) denotes the node with value a. Let node(x) be a node with both non -NULL left and right children. Which of the following is true about the in-order successor y of x?[Question ID = 11293]

1. node(y) is always a leaf node. [Option ID = 45169]
2. node(y) is always either a leaf node or a node with NULL left child. [Option ID = 45170]
3. node(y) is always either a leaf node or a node with NULL right child. [Option ID = 45171]
4. node(y) may be an ancestor of node(x). [Option ID = 45172]

19) What does the following C-like pseudo code do when the function is called for integer n?

```
void fun(int n)
{
    Queue Q;
    while (n > 0)
    {
      InsertQ(Q, n%2);
      n = n/2;
    }
```

```
    while (!isEmpty(Q))
    printf("%d ", DeleteQ(Q));
}
```

[Question ID = 11294]
1. Prints the binary representation of n in reverse order

    [Option ID = 45173]
2. Prints the binary representation of n

    [Option ID = 45174]
3. Prints the binary representation of log n in reverse order

    [Option ID = 45175]
4. Prints the binary representation of log n

    [Option ID = 45176]

20) Consider a machine in which comparison operations are free but the assignment operation is expensive. Which of the following sorting algorithm is best suited for this machine?[Question ID = 11295]
1. Insertion Sort [Option ID = 45177]
2. Selection Sort [Option ID = 45178]
3. Merge Sort [Option ID = 45179]
4. Heap Sort [Option ID = 45180]

21) Consider the 0/1 Knapsack problem with n objects of weights w_i and profit p_i and knapsack capacity W. Consider the following dynamic programming solution for the problem: Order the objects in any arbitrary order. Let Opt(i) denotes the optimal profit obtained by choosing objects from the first i objects. Let Opt(i) = max{Opt(i-1), Opt(i-1) + W – w_i + p_i}. Which of the following statements is true about this solution?

[Question ID = 11296]
1. The solution will always give the optimal profit and its running time is θ (n).

    [Option ID = 45181]
2. The solution will always give the optimal profit and its running time is θ (n + W).

    [Option ID = 45182]
3. The solution will not give the optimal profit.

    [Option ID = 45183]
4. None of the above.

    [Option ID = 45184]

22) Which of the following data structures, respectively, are best suited to implement Kruskal's algorithm and Prim's algorithm to find a minimum spanning tree in an undirected connected graph?[Question ID = 11297]
1. Min-Heap and Min-Heap [Option ID = 45185]
2. Union-Find and Min-Heap [Option ID = 45186]
3. Min-Heap and Union-Find [Option ID = 45187]
4. Union-Find and Max-Heap [Option ID = 45188]

23) Consider the following functions:

$f(n) = n \log n$ and $g(n) = \log^2 (2^n)$

Which of the following is true?

[Question ID = 11298]
1. $f(n) = O(g(n))$

    [Option ID = 45189]
2. $f(n) = \theta(g(n))$

    [Option ID = 45190]
3. $f(n) = \Omega(g(n))$

    [Option ID = 45191]
4. $f(n) = o(g(n))$

    [Option ID = 45192]

24) The generating function for the sequence 1, 4, 9, 16, ….. with a_0=1 , is _____

<span "="">

[Question ID = 11299]
1. $(1 + x)/(1 - x)^3$

    [Option ID = 45193]
2. $(1 + x)/(1 - x)^2$

    [Option ID = 45194]
3. $(1 + x)/(1 - x^3)$

[Option ID = 45195]

4. $(1 + x)/(1 - x^2)$

[Option ID = 45196]

25) In any graph, the sum of the degree of all vertices is_____, and the number of vertices with odd degree is
_____.[Question ID = 11300]
1. odd, even [Option ID = 45197]
2. even, even [Option ID = 45198]
3. odd, odd [Option ID = 45199]
4. even, odd [Option ID = 45200]

26) Choose the correct option for the following statement.

$(P \vee Q) \rightarrow R$ is _____ from $(P \rightarrow R) \vee (Q \rightarrow R)$.

[Question ID = 11301]
1. logically equivalent and deducible

[Option ID = 45201]
2. neither logically equivalent nor deducible

[Option ID = 45202]
3. not logically equivalent, but deducible

[Option ID = 45203]
4. logically equivalent, but not deducible

[Option ID = 45204]

27) Consider the following program
main()
{
int proc_id = fork();
proc_id = fork();
if (proc_id == 0)
cout << "First" << endl;
else
cout << "Second" << endl;
}

It will print:

[Question ID = 11302]
1. "First" twice and "Second" twice

[Option ID = 45205]
2. "First" thrice and "Second" once

[Option ID = 45206]
3. "First" once and "Second" once

[Option ID = 45207]
4. "First" once and "Second" thrice

[Option ID = 45208]

28) Which of the following memory management schemes offers facility for sharing function between two processes?
[Question ID = 11303]
1. Partition memory management [Option ID = 45209]
2. Segmented memory management [Option ID = 45210]
3. Paging memory management [Option ID = 45211]
4. Demand Paging memory management [Option ID = 45212]

29) Which of the following is used to implement system call?[Question ID = 11304]
1. Internal Hardware interrupt [Option ID = 45213]
2. External Hardware interrupt [Option ID = 45214]
3. Software interrupt [Option ID = 45215]
4. DMA [Option ID = 45216]

30) How many bits are there in the logical address if the logical address space has 64 pages of 1024 words each?[Question
ID = 11305]
1. 4 [Option ID = 45217]
2. 8 [Option ID = 45218]
3. 12 [Option ID = 45219]
4. 16 [Option ID = 45220]

1) Read the following passage and answer the question that follow:

Delhi skies were just clear enough last Sunday to let sky-watchers have a ringside view of a close encounter in space: a half-a-mile-wide asteroid buzzing the earth at a distance a little farther than the moon. It was a rare opportunity to watch a close-up of one of these visitors from the asteroid belt between the orbits of Mars and Jupiter who often drop in without notice and cause the world's pulse to quicken.

A two-mile wide tumbling rock from space suddenly became the cynosure of all telescopes last month as astronomers proclaimed it 'the most earth-threatening object' ever detected. Preliminary calculations even suggested it might hit the earth in 2019. That it proved to be a false alarm is another matter. What's important is that such celestial brushes may form part of a countdown to Armageddon.

For every asteroid spotted, several whiz by unnoticed, with some actually passing closer to us than the moon. The number of these Near Earth Objects, or NEOs, far exceeds the known list—a catalogue that needs to be completed before it's too late.

Space agencies have projects to push potential earth-grazers off course. But there's yet to be a comprehensive global space watch programme. Most NEOs slip through unnoticed because of limitations to telescope time, technology and funding. So, it's important for governments not to grudge asteroid hunters the resources they badly need to keep a close watch.

A global asteroid monitoring system of sorts already exists in the form of an assorted group of government and private agencies, along with amateur and professional asteroid researchers. But it has no mechanism to assess the risk factors of NEOs or to determine what, and how much, information should be passed on to the public. As a result, the discoveries of more NEOs do not necessarily lead to a corresponding increase in public awareness of the threat they pose. Newspapers, television and movies aren't of much help either, and a confused public is often left wondering what's fact and what's fiction.

In fact, a kind of 'cry-wolf syndrome' sets in after every sighting, lowering the threat perception in the public mind. If or, more likely, when—there's an asteroid strike, events like Hiroshima and September 11 would pale in comparison. In the cosmic shooting gallery, bruisers larger than a mile across probably have a chance of walloping the earth every 100,000 to 300,000 years, while those 330 feet or larger could score a hit every 1,000 to 2,000 years.

The biggies cause the most concern. If a hunk of stone and metal the size of a 20-storey building hits the earth and sets off a million-megaton blast, it'd be like a million city-busting bombs going off simultaneously. Deaths could be counted in millions and most of the flora and fauna would vanish.

Didn't the dinosaurs once think the planet would forever be one big Jurassic Park? The poor beasts never had a space programme and became a smorgasbord for a nasty asteroid. The moral then is to have a space watch programme which includes professional and amateur astronomers maintaining a nightly vigil around the globe. A powerful telescope could be placed outside the earth's orbit to monitor the blind spot created by the sun and rule out unexpected impacts.

In the northern hemisphere, scores of professional astronomers constantly scan the dark skies for tiny points of light and their tell-tale tracks. But the southern hemisphere is yet to have such sky sentinels whose computers could crunch foot-long numbers to find out if the ultimate destination of any of these shadow mountains in space is Planet Earth.

The warning given by the astronomers …………………………..

[Question ID = 11306]
1. proved to be a false alarm

   [Option ID = 45221]
2. was baseless

   [Option ID = 45222]
3. did not frighten the people

   [Option ID = 45223]
4. proved to be true

   [Option ID = 45224]

2) Read the following passage and answer the question that follow:

Delhi skies were just clear enough last Sunday to let sky-watchers have a ringside view of a close encounter in space: a half-a-mile-wide asteroid buzzing the earth at a distance a little farther than the moon. It was a rare opportunity to watch a close-up of one of these visitors from the asteroid belt between the orbits of Mars and Jupiter who often drop in without notice and cause the world's pulse to quicken.

A two-mile wide tumbling rock from space suddenly became the cynosure of all telescopes last month as astronomers proclaimed it 'the most earth-threatening object' ever detected. Preliminary calculations even suggested it might hit the earth in 2019. That it proved to be a false alarm is another matter. What's important is that such celestial brushes may form part of a countdown to Armageddon.

For every asteroid spotted, several whiz by unnoticed, with some actually passing closer to us than the moon. The number of these Near Earth Objects, or NEOs, far exceeds the known list—a catalogue that needs to be completed before it's too late.

Space agencies have projects to push potential earth-grazers off course. But there's yet to be a comprehensive global space watch programme. Most NEOs slip through unnoticed because of limitations to telescope time, technology and

funding. So, it's important for governments not to grudge asteroid hunters the resources they badly need to keep a close watch.

A global asteroid monitoring system of sorts already exists in the form of an assorted group of government and private agencies, along with amateur and professional asteroid researchers. But it has no mechanism to assess the risk factors of NEOs or to determine what, and how much, information should be passed on to the public. As a result, the discoveries of more NEOs do not necessarily lead to a corresponding increase in public awareness of the threat they pose. Newspapers, television and movies aren't of much help either, and a confused public is often left wondering what's fact and what's fiction.

In fact, a kind of 'cry-wolf syndrome' sets in after every sighting, lowering the threat perception in the public mind. If or, more likely, when—there's an asteroid strike, events like Hiroshima and September 11 would pale in comparison. In the cosmic shooting gallery, bruisers larger than a mile across probably have a chance of walloping the earth every 100,000 to 300,000 years, while those 330 feet or larger could score a hit every 1,000 to 2,000 years.

The biggies cause the most concern. If a hunk of stone and metal the size of a 20-storey building hits the earth and sets off a million-megaton blast, it'd be like a million city-busting bombs going off simultaneously. Deaths could be counted in millions and most of the flora and fauna would vanish.

Didn't the dinosaurs once think the planet would forever be one big Jurassic Park? The poor beasts never had a space programme and became a smorgasbord for a nasty asteroid. The moral then is to have a space watch programme which includes professional and amateur astronomers maintaining a nightly vigil around the globe. A powerful telescope could be placed outside the earth's orbit to monitor the blind spot created by the sun and rule out unexpected impacts.

In the northern hemisphere, scores of professional astronomers constantly scan the dark skies for tiny points of light and their tell-tale tracks. But the southern hemisphere is yet to have such sky sentinels whose computers could crunch foot-long numbers to find out if the ultimate destination of any of these shadow mountains in space is Planet Earth.

NEO is ………………………..

[Question ID = 11307]

1. Near Earth Objects

   [Option ID = 45225]
2. National Earth Objects

   [Option ID = 45226]
3. Nominal Earth Orientations

   [Option ID = 45227]
4. Near Earth Orientation

   [Option ID = 45228]

3) Read the following passage and answer the question that follow:

Delhi skies were just clear enough last Sunday to let sky-watchers have a ringside view of a close encounter in space: a half-a-mile-wide asteroid buzzing the earth at a distance a little farther than the moon. It was a rare opportunity to watch a close-up of one of these visitors from the asteroid belt between the orbits of Mars and Jupiter who often drop in without notice and cause the world's pulse to quicken.

A two-mile wide tumbling rock from space suddenly became the cynosure of all telescopes last month as astronomers proclaimed it 'the most earth-threatening object' ever detected. Preliminary calculations even suggested it might hit the earth in 2019. That it proved to be a false alarm is another matter. What's important is that such celestial brushes may form part of a countdown to Armageddon.

For every asteroid spotted, several whiz by unnoticed, with some actually passing closer to us than the moon. The number of these Near Earth Objects, or NEOs, far exceeds the known list—a catalogue that needs to be completed before it's too late.

Space agencies have projects to push potential earth-grazers off course. But there's yet to be a comprehensive global space watch programme. Most NEOs slip through unnoticed because of limitations to telescope time, technology and funding. So, it's important for governments not to grudge asteroid hunters the resources they badly need to keep a close watch.

A global asteroid monitoring system of sorts already exists in the form of an assorted group of government and private agencies, along with amateur and professional asteroid researchers. But it has no mechanism to assess the risk factors of NEOs or to determine what, and how much, information should be passed on to the public. As a result, the discoveries of more NEOs do not necessarily lead to a corresponding increase in public awareness of the threat they pose. Newspapers, television and movies aren't of much help either, and a confused public is often left wondering what's fact and what's fiction.

In fact, a kind of 'cry-wolf syndrome' sets in after every sighting, lowering the threat perception in the public mind. If or, more likely, when—there's an asteroid strike, events like Hiroshima and September 11 would pale in comparison. In the cosmic shooting gallery, bruisers larger than a mile across probably have a chance of walloping the earth every 100,000 to 300,000 years, while those 330 feet or larger could score a hit every 1,000 to 2,000 years.

The biggies cause the most concern. If a hunk of stone and metal the size of a 20-storey building hits the earth and sets off a million-megaton blast, it'd be like a million city-busting bombs going off simultaneously. Deaths could be counted in millions and most of the flora and fauna would vanish.

Didn't the dinosaurs once think the planet would forever be one big Jurassic Park? The poor beasts never had a space programme and became a smorgasbord for a nasty asteroid. The moral then is to have a space watch programme which includes professional and amateur astronomers maintaining a nightly vigil around the globe. A powerful telescope could be

placed outside the earth's orbit to monitor the blind spot created by the sun and rule out unexpected impacts.

In the northern hemisphere, scores of professional astronomers constantly scan the dark skies for tiny points of light and their tell-tale tracks. But the southern hemisphere is yet to have such sky sentinels whose computers could crunch foot-long numbers to find out if the ultimate destination of any of these shadow mountains in space is Planet Earth.

What causes the most concern?

[Question ID = 11308]

1. Biggies

   [Option ID = 45229]
2. Human beings

   [Option ID = 45230]
3. Scientists

   [Option ID = 45231]
4. Beasts

   [Option ID = 45232]

4) Read the following passage and answer the question that follow:

Delhi skies were just clear enough last Sunday to let sky-watchers have a ringside view of a close encounter in space: a half-a-mile-wide asteroid buzzing the earth at a distance a little farther than the moon. It was a rare opportunity to watch a close-up of one of these visitors from the asteroid belt between the orbits of Mars and Jupiter who often drop in without notice and cause the world's pulse to quicken.

A two-mile wide tumbling rock from space suddenly became the cynosure of all telescopes last month as astronomers proclaimed it 'the most earth-threatening object' ever detected. Preliminary calculations even suggested it might hit the earth in 2019. That it proved to be a false alarm is another matter. What's important is that such celestial brushes may form part of a countdown to Armageddon.

For every asteroid spotted, several whiz by unnoticed, with some actually passing closer to us than the moon. The number of these Near Earth Objects, or NEOs, far exceeds the known list—a catalogue that needs to be completed before it's too late.

Space agencies have projects to push potential earth-grazers off course. But there's yet to be a comprehensive global space watch programme. Most NEOs slip through unnoticed because of limitations to telescope time, technology and funding. So, it's important for governments not to grudge asteroid hunters the resources they badly need to keep a close watch.

A global asteroid monitoring system of sorts already exists in the form of an assorted group of government and private agencies, along with amateur and professional asteroid researchers. But it has no mechanism to assess the risk factors of NEOs or to determine what, and how much, information should be passed on to the public. As a result, the discoveries of more NEOs do not necessarily lead to a corresponding increase in public awareness of the threat they pose. Newspapers, television and movies aren't of much help either, and a confused public is often left wondering what's fact and what's fiction.

In fact, a kind of 'cry-wolf syndrome' sets in after every sighting, lowering the threat perception in the public mind. If or, more likely, when—there's an asteroid strike, events like Hiroshima and September 11 would pale in comparison. In the cosmic shooting gallery, bruisers larger than a mile across probably have a chance of walloping the earth every 100,000 to 300,000 years, while those 330 feet or larger could score a hit every 1,000 to 2,000 years.

The biggies cause the most concern. If a hunk of stone and metal the size of a 20-storey building hits the earth and sets off a million-megaton blast, it'd be like a million city- busting bombs going off simultaneously. Deaths could be counted in millions and most of the flora and fauna would vanish.

Didn't the dinosaurs once think the planet would forever be one big Jurassic Park? The poor beasts never had a space programme and became a smorgasbord for a nasty asteroid. The moral then is to have a space watch programme which includes professional and amateur astronomers maintaining a nightly vigil around the globe. A powerful telescope could be placed outside the earth's orbit to monitor the blind spot created by the sun and rule out unexpected impacts.

In the northern hemisphere, scores of professional astronomers constantly scan the dark skies for tiny points of light and their tell-tale tracks. But the southern hemisphere is yet to have such sky sentinels whose computers could crunch foot-long numbers to find out if the ultimate destination of any of these shadow mountains in space is Planet Earth.

The northern hemisphere has successfully received the attention of _____ .

[Question ID = 11309]

1. geographers

   [Option ID = 45233]
2. professional astronomers

   [Option ID = 45234]
3. scientists

   [Option ID = 45235]
4. common people

   [Option ID = 45236]

5) Read the following passage and answer the question that follow:

Delhi skies were just clear enough last Sunday to let sky-watchers have a ringside view of a close encounter in space: a half-a-mile-wide asteroid buzzing the earth at a distance a little farther than the moon. It was a rare opportunity to watch a close-up of one of these visitors from the asteroid belt between the orbits of Mars and Jupiter who often drop in without notice and cause the world's pulse to quicken.

A two-mile wide tumbling rock from space suddenly became the cynosure of all telescopes last month as astronomers proclaimed it 'the most earth-threatening object' ever detected. Preliminary calculations even suggested it might hit the earth in 2019. That it proved to be a false alarm is another matter. What's important is that such celestial brushes may form part of a countdown to Armageddon.

For every asteroid spotted, several whiz by unnoticed, with some actually passing closer to us than the moon. The number of these Near Earth Objects, or NEOs, far exceeds the known list—a catalogue that needs to be completed before it's too late.

Space agencies have projects to push potential earth-grazers off course. But there's yet to be a comprehensive global space watch programme. Most NEOs slip through unnoticed because of limitations to telescope time, technology and funding. So, it's important for governments not to grudge asteroid hunters the resources they badly need to keep a close watch.

A global asteroid monitoring system of sorts already exists in the form of an assorted group of government and private agencies, along with amateur and professional asteroid researchers. But it has no mechanism to assess the risk factors of NEOs or to determine what, and how much, information should be passed on to the public. As a result, the discoveries of more NEOs do not necessarily lead to a corresponding increase in public awareness of the threat they pose. Newspapers, television and movies aren't of much help either, and a confused public is often left wondering what's fact and what's fiction.

In fact, a kind of 'cry-wolf syndrome' sets in after every sighting, lowering the threat perception in the public mind. If or, more likely, when—there's an asteroid strike, events like Hiroshima and September 11 would pale in comparison. In the cosmic shooting gallery, bruisers larger than a mile across probably have a chance of walloping the earth every 100,000 to 300,000 years, while those 330 feet or larger could score a hit every 1,000 to 2,000 years.

The biggies cause the most concern. If a hunk of stone and metal the size of a 20-storey building hits the earth and sets off a million-megaton blast, it'd be like a million city-busting bombs going off simultaneously. Deaths could be counted in millions and most of the flora and fauna would vanish.

Didn't the dinosaurs once think the planet would forever be one big Jurassic Park? The poor beasts never had a space programme and became a smorgasbord for a nasty asteroid. The moral then is to have a space watch programme which includes professional and amateur astronomers maintaining a nightly vigil around the globe. A powerful telescope could be placed outside the earth's orbit to monitor the blind spot created by the sun and rule out unexpected impacts.

In the northern hemisphere, scores of professional astronomers constantly scan the dark skies for tiny points of light and their tell-tale tracks. But the southern hemisphere is yet to have such sky sentinels whose computers could crunch foot-long numbers to find out if the ultimate destination of any of these shadow mountains in space is Planet Earth.

Find the word in the passage that is similar to centre of attraction.

[Question ID = 11310]

1. Cynosure

   [Option ID = 45237]
2. Syndrome

   [Option ID = 45238]
3. Moiety

   [Option ID = 45239]
4. Analog

   [Option ID = 45240]

6) Read the following passage and answer the question that follow:

Delhi skies were just clear enough last Sunday to let sky-watchers have a ringside view of a close encounter in space: a half-a-mile-wide asteroid buzzing the earth at a distance a little farther than the moon. It was a rare opportunity to watch a close-up of one of these visitors from the asteroid belt between the orbits of Mars and Jupiter who often drop in without notice and cause the world's pulse to quicken.

A two-mile wide tumbling rock from space suddenly became the cynosure of all telescopes last month as astronomers proclaimed it 'the most earth-threatening object' ever detected. Preliminary calculations even suggested it might hit the earth in 2019. That it proved to be a false alarm is another matter. What's important is that such celestial brushes may form part of a countdown to Armageddon.

For every asteroid spotted, several whiz by unnoticed, with some actually passing closer to us than the moon. The number of these Near Earth Objects, or NEOs, far exceeds the known list—a catalogue that needs to be completed before it's too late.

Space agencies have projects to push potential earth-grazers off course. But there's yet to be a comprehensive global space watch programme. Most NEOs slip through unnoticed because of limitations to telescope time, technology and funding. So, it's important for governments not to grudge asteroid hunters the resources they badly need to keep a close watch.

A global asteroid monitoring system of sorts already exists in the form of an assorted group of government and private agencies, along with amateur and professional asteroid researchers. But it has no mechanism to assess the risk factors of NEOs or to determine what, and how much, information should be passed on to the public. As a result, the discoveries of more NEOs do not necessarily lead to a corresponding increase in public awareness of the threat they pose. Newspapers, television and movies aren't of much help either, and a confused public is often left wondering what's fact and what's fiction.

In fact, a kind of 'cry-wolf syndrome' sets in after every sighting, lowering the threat perception in the public mind. If or, more likely, when—there's an asteroid strike, events like Hiroshima and September 11 would pale in comparison. In the cosmic shooting gallery, bruisers larger than a mile across probably have a chance of walloping the earth every 100,000 to 300,000 years, while those 330 feet or larger could score a hit every 1,000 to 2,000 years.

The biggies cause the most concern. If a hunk of stone and metal the size of a 20-storey building hits the earth and sets off a million-megaton blast, it'd be like a million city- busting bombs going off simultaneously. Deaths could be counted in millions and most of the flora and fauna would vanish.

Didn't the dinosaurs once think the planet would forever be one big Jurassic Park? The poor beasts never had a space programme and became a smorgasbord for a nasty asteroid. The moral then is to have a space watch programme which includes professional and amateur astronomers maintaining a nightly vigil around the globe. A powerful telescope could be placed outside the earth's orbit to monitor the blind spot created by the sun and rule out unexpected impacts.

In the northern hemisphere, scores of professional astronomers constantly scan the dark skies for tiny points of light and their tell-tale tracks. But the southern hemisphere is yet to have such sky sentinels whose computers could crunch foot-long numbers to find out if the ultimate destination of any of these shadow mountains in space is Planet Earth.

'cry-wolf syndrome' is _____ .

[Question ID = 11311]
1. the threat perception in the public mind

   [Option ID = 45241]
2. the threat of wolf among people

   [Option ID = 45242]
3. professional asteroid researchers

   [Option ID = 45243]
4. cosmic shooting gallery

   [Option ID = 45244]

7) Read the following passage and answer the question that follow:

Delhi skies were just clear enough last Sunday to let sky-watchers have a ringside view of a close encounter in space: a half-a-mile-wide asteroid buzzing the earth at a distance a little farther than the moon. It was a rare opportunity to watch a close-up of one of these visitors from the asteroid belt between the orbits of Mars and Jupiter who often drop in without notice and cause the world's pulse to quicken.

A two-mile wide tumbling rock from space suddenly became the cynosure of all telescopes last month as astronomers proclaimed it 'the most earth-threatening object' ever detected. Preliminary calculations even suggested it might hit the earth in 2019. That it proved to be a false alarm is another matter. What's important is that such celestial brushes may form part of a countdown to Armageddon.

For every asteroid spotted, several whiz by unnoticed, with some actually passing closer to us than the moon. The number of these Near Earth Objects, or NEOs, far exceeds the known list—a catalogue that needs to be completed before it's too late.

Space agencies have projects to push potential earth-grazers off course. But there's yet to be a comprehensive global space watch programme. Most NEOs slip through unnoticed because of limitations to telescope time, technology and funding. So, it's important for governments not to grudge asteroid hunters the resources they badly need to keep a close watch.

their tell-tale tracks. But the southern hemisphere is yet to have such sky sentinels whose computers could crunch foot-long numbers to find out if the ultimate destination of any of these shadow mountains in space is Planet Earth.

According to the passage, which one is true about newspapers, television and movies?

[Question ID = 11312]

1. Confuse people, often left wondering what fact is and what fiction is

   [Option ID = 45245]
2. Tell people about asteroids in detail

   [Option ID = 45246]
3. Inform about the tiny points of light and their tell-tale tracks

   [Option ID = 45247]
4. Enlighten public about the earth

   [Option ID = 45248]

8) Read the following passage and answer the question that follow:

Delhi skies were just clear enough last Sunday to let sky-watchers have a ringside view of a close encounter in space: a half-a-mile-wide asteroid buzzing the earth at a distance a little farther than the moon. It was a rare opportunity to watch a close-up of one of these visitors from the asteroid belt between the orbits of Mars and Jupiter who often drop in without notice and cause the world's pulse to quicken.

A two-mile wide tumbling rock from space suddenly became the cynosure of all telescopes last month as astronomers proclaimed it 'the most earth-threatening object' ever detected. Preliminary calculations even suggested it might hit the earth in 2019. That it proved to be a false alarm is another matter. What's important is that such celestial brushes may form part of a countdown to Armageddon.

For every asteroid spotted, several whiz by unnoticed, with some actually passing closer to us than the moon. The number of these Near Earth Objects, or NEOs, far exceeds the known list—a catalogue that needs to be completed before it's too late.

Space agencies have projects to push potential earth-grazers off course. But there's yet to be a comprehensive global space watch programme. Most NEOs slip through unnoticed because of limitations to telescope time, technology and funding. So, it's important for governments not to grudge asteroid hunters the resources they badly need to keep a close watch.

A global asteroid monitoring system of sorts already exists in the form of an assorted group of government and private agencies, along with amateur and professional asteroid researchers. But it has no mechanism to assess the risk factors of NEOs or to determine what, and how much, information should be passed on to the public. As a result, the discoveries of more NEOs do not necessarily lead to a corresponding increase in public awareness of the threat they pose. Newspapers, television and movies aren't of much help either, and a confused public is often left wondering what's fact and what's fiction.

In fact, a kind of 'cry-wolf syndrome' sets in after every sighting, lowering the threat perception in the public mind. If or, more likely, when—there's an asteroid strike, events like Hiroshima and September 11 would pale in comparison. In the cosmic shooting gallery, bruisers larger than a mile across probably have a chance of walloping the earth every 100,000 to 300,000 years, while those 330 feet or larger could score a hit every 1,000 to 2,000 years.

The biggies cause the most concern. If a hunk of stone and metal the size of a 20-storey building hits the earth and sets off a million-megaton blast, it'd be like a million city- busting bombs going off simultaneously. Deaths could be counted in millions and most of the flora and fauna would vanish.

Didn't the dinosaurs once think the planet would forever be one big Jurassic Park? The poor beasts never had a space programme and became a smorgasbord for a nasty asteroid. The moral then is to have a space watch programme which includes professional and amateur astronomers maintaining a nightly vigil around the globe. A powerful telescope could be placed outside the earth's orbit to monitor the blind spot created by the sun and rule out unexpected impacts.

In the northern hemisphere, scores of professional astronomers constantly scan the dark skies for tiny points of light and their tell-tale tracks. But the southern hemisphere is yet to have such sky sentinels whose computers could crunch foot-long numbers to find out if the ultimate destination of any of these shadow mountains in space is Planet Earth.

In the northern hemisphere, why do professional astronomers constantly scan the dark skies?

[Question ID = 11313]

1. To threaten people

   [Option ID = 45249]
2. To study cool spots on the sun

   [Option ID = 45250]
3. To study tiny points of light and their telltale tracks

   [Option ID = 45251]
4. To study life of dinosaurs

   [Option ID = 45252]

Topic:- CS MSC C

1) If 1, a_1, a_2, ..., a_{n-1} are the n roots of unity, find the value of $(1- a_1) (1 - a_2) ... (1 - a_{n-1})$.

[Question ID = 11314]

1. n

[Option ID = 45253]

2. n-1

[Option ID = 45254]

3. n+1

[Option ID = 45255]

4. n^2

[Option ID = 45256]

2) Let $0 < x_l < 1$. if $x_{n+1} = \dfrac{x_n + 3}{3x_n + 1}$, $n = 1,2,3, ...$. What is the value of x_{n+2} ?

[Question ID = 11315]

1. $x_{n+2} = \dfrac{5x_n+3}{3x_n+5}$

[Option ID = 45257]

2. $x_{n+2} = \dfrac{5x_n-3}{3x_n+5}$

[Option ID = 45258]

3. $x_{n+2} = \dfrac{5x_n+3}{3x_n-5}$

[Option ID = 45259]

4. $x_{n+2} = \dfrac{5x_n-3}{3x_n-5}$

[Option ID = 45260]

3) Find the integral of $\dfrac{x^3 - 1}{x^2 - 1}$

[Question ID = 11316]

1. $\dfrac{x^2}{2} + ln(x - 1) + c$

[Option ID = 45261]

2. $\dfrac{x^2}{2} - ln(x - 1) + c$

[Option ID = 45262]

3. $\dfrac{x^2}{2} - ln(x + 1) + c$

[Option ID = 45263]

4. $\dfrac{x^2}{2} + ln(x + 1) + c$

[Option ID = 45264]

4) Let A be a 3x3 matrix with characteristic equation $\lambda^3 - 5\lambda^2 = 0$. Which of the following is correct?

[Question ID = 11317]

1. Rank of A is either 1 or 2.

[Option ID = 45265]

2. Rank of A is 1.

[Option ID = 45266]

3. Rank of A is 2.

[Option ID = 45267]

4. Rank of A is 3.

[Option ID = 45268]

5) Which of following is correct?[Question ID = 11318]

1. Var (x) = E(x) - E(x²) [Option ID = 45269]
2. Var (x) = E(x²) - E(x) [Option ID = 45270]
3. Var (x) = E(x²) - [E(x)]² [Option ID = 45271]
4. Var (x) = [E(x²)]² - E(x²) [Option ID = 45272]

6) What is the probability of getting exactly two "tails" in four tosses of a fair coin?[Question ID = 11319]

1. 1/2 [Option ID = 45273]
2. 3/8 [Option ID = 45274]
3. 5/8 [Option ID = 45275]
4. 1/8 [Option ID = 45276]

7) The form of the exact solution to $2\dfrac{dy}{dx} + 3y = e^{-x}$, $y(0) = 5$ is _____.

[Question ID = 11320]

1. $Ae^{-1.5x} + Be^{-x}$

   [Option ID = 45277]

2. $Ae^{-1.5x} + Bxe^{-x}$

   [Option ID = 45278]

3. $Ae^{1.5x} + Be^{-x}$

   [Option ID = 45279]

4. $Ae^{1.5x} + Bxe^{-x}$

   [Option ID = 45280]

8) A differential equation is considered to be ordinary if it has _____ .[Question ID = 11321]

1. one dependent variable [Option ID = 45281]
2. more than one dependent variable [Option ID = 45282]
3. one independent variable [Option ID = 45283]
4. more than one independent variable [Option ID = 45284]

9) If the line ax + by + c = 0 is a normal to the curve xy = 1, which one of the following is correct?

[Question ID = 11322]

1. a.b < 0

   [Option ID = 45285]

2. a.b > 0

   [Option ID = 45286]

3. a.b = 0

   [Option ID = 45287]

4. None of the these

   [Option ID = 45288]

10) If $a = 1 + \dfrac{x^3}{3!} + \dfrac{x^6}{6!} + \ldots$

$b = x + \dfrac{x^4}{4!} + \dfrac{x^7}{7!} + \ldots$

$c = \dfrac{x^2}{2!} + \dfrac{x^5}{5!} + \dfrac{x^8}{8!} + \ldots$

then, which of the following holds true?[Question ID = 11323]

1. $a^3 + b^3 + c^3 - 3abc = 1$ [Option ID = 45289]
2. $a^3 + b^3 + c^3 + 3abc = 1$ [Option ID = 45290]
3. $a^3 + b^3 + c^3 - 3abc = -1$ [Option ID = 45291]
4. $a^3 + b^3 + c^3 + 3abc = -1$ [Option ID = 45292]

11) Which is correct solution of the linear system?

x - z   = 1
3 x + 2 y = -3
- x -   y = 2

[Question ID = 11324]

1. $[\ 1\ \ -3\ \ 0\ ]^T$

   [Option ID = 45293]

2. $[\ 1\ \ -3\ \ 1\ ]^T$

   [Option ID = 45294]

3. $[\ 1\ \ -3\ \ -1\ ]^T$

   [Option ID = 45295]

4. $[\ 1\ \ -3\ \ 3]^T$

   [Option ID = 45296]

12) The product of the eigen values of the matrix $\begin{bmatrix} 2 & 1 & 1 \\ 0 & 1 & 0 \\ 1 & 1 & 2 \end{bmatrix}$ is _____ .

[Question ID = 11325]

1. 1

   [Option ID = 45297]

2. 2

[Option ID = 45298]

3. 3

    [Option ID = 45299]

4. 4

    [Option ID = 45300]