

**Directions of Test**

Test Name	Bull Placement Goldman Sachs 02	Total Questions	37	Total Time	135 Mins
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Section Name	No. of Questions	Marks per Question	Negative Marking
Aptitude	25	1	0
Technical	10	1	0
Coding	2	1	0

**Section : Aptitude**

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 1**

In a certain laboratory, chemicals are identified by a color-coding system. There are 20 different chemicals. Each one is coded with either a single color or a unique two-color pair. If the order of colors in the pairs doesn't matter, what is the minimum number of different colors needed to code all 20 chemicals with either a single color or a unique pair of colors ?

- A) 5   B) 7   ☒ C) 6   D) 20

**Explanation:-**

Start with the lowest options.  ${}^5C_1 = 5$  ways,  ${}^5C_2 = 10$  ways. It does not serve the purpose. Next option of 6 colours can solve the problem.

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 2**

A man purchased 40 fruits, apples and oranges, for Rs. 17. Had he purchased as many oranges as apples and as many apples as oranges, he would have paid Rs. 15. Find the cost of one pair of an apple and an orange.

- A) 70 paise   B) 60 paise   ☒ C) 80 paise   D) 1 rupee

**Explanation:-**

Let  $n_1$  is the no. of apple  
and  $n_2$  = of oranges  
 $\therefore n_1A + n_2O = 17$ .....(1)  
 $n_2A + n_1O = 15$ .....(2)  
Adding (1) and (2) we get  
 $(n_1 + n_2)A + (n_1 + n_2)O = 32$   
 $(n_1 + n_2)[A + O] = 32$   
 $n_1 + n_2 = 40$ .....(given)  
 $\therefore A + O = \frac{32}{40} = 0.8 \text{ Rs} = 80 \text{ Paise}$



**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 3**

The average age of all the students of a class is 18 years. The average age of boys of the class is 20 years and that of the girls is 15 years. If the number of girls in the class is 20, then what is the number of boys in the class?

- ✓ A) 30   B) 15   C) 45   D) 50

**Explanation:-** Let number of boys be  $B$

ATQ,

$$(B \times 20 + 20 \times 15) / 20 + B = 18$$

$$20B + 300 = 360 + 18B$$

$$2B = 60$$

$$B = 30$$

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 4**

In a tour, I spent every day as many ten rupee (notes) as the number of days I had been away from the home. My total expenditure was Rs. 18,300. How long did I stay away from the home?

- A) 1 month   ✓ B) 2 months   C) 3 months   D) 4 months

**Explanation:-**

Let the total number of days of my tour away from home be ' $n$ '.

My expenditure, on day 1 =  $10 \times 1$

On day 2 =  $10 \times 2$ ,

On day 3 =  $10 \times 3$  and so on

Therefore, on day  $n = 10 \times n$

$$\therefore 10 \times 1 + 10 \times 2 + 10 \times 3 + \dots + 10 \times n = 18300$$

$$\Rightarrow 10[1 + 2 + 3 + \dots + n] = 18300$$

$$\Rightarrow n(n+1)/2 = 1830$$

$$\Rightarrow n(n+1) = 3660 = 60 \times 61$$

$$\Rightarrow n = 60 \text{ days or 2 months}$$



**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 5**

A tradesman allows a discount of 15% on the marked price. How much above the cost price must he mark his goods to gain 19%?

- A) 34%    ☒ B) 40%    C) 25%    D) 30%

**Explanation:-**

Let CP = x

SP = 1.19x (Gain 19%)

Let MP = y (Discount 15%)

SP = .85y

.85y = 1.19x

$\Rightarrow y = 1.4x$

Mark up = 40%

Alternatively

Let CP = 100

SP = 119

Now 119/- SP is 85% of MP

$\Rightarrow 100\% \text{ of MP} = \frac{119}{.85} = 140/-$

$\Rightarrow \text{MP} = 140/- \text{ \& CP} = 100/-$

$\Rightarrow \text{Mark up} = 40\%$

**DIRECTION for the question:** Solve the following question and mark the best possible option.

**Question No. : 6**

A jar contains 10 red marbles and 30 green ones. How many red marbles must be added to the jar so that 60% of the marbles will be red?

- A) 25    B) 30    ☒ C) 35    D) 40

**Explanation:-**

Let 'x' red marbles will be added to the jar Then, according to the conditions,

$$(10 + x) = \frac{60}{100} \times (40 + x) \Rightarrow x = 35$$



**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 7**

Mr. Ravan left Rs. 18750 for his two sons- Indrajit and Prahasta, 14 and 16 years of age. When both attained an age of 20 years, the amount they got at 5% p.a. simple interest was same. Find the difference between their original shares.

- A) Rs. 250    B) Rs. 150    ☒ C) Rs. 750    D) Rs. 500

**Explanation:-** Let their shares be  $x$  and  $y$  Rs

$$\text{So, } x + y = 18750$$

$$\text{Amount attained by Indrajit at age 20} = x + \frac{x \cdot 5}{100} = 1.05x$$

$$\text{Amount attained by Prahasta} = y + \frac{y \cdot 4}{100} = 1.04y$$

$$\text{Given } 1.05x = 1.04y$$

$$\Rightarrow \frac{x}{y} = \frac{104}{105}$$

So, dividing 18750 in 104 : 105 gives

$$x = 9000$$

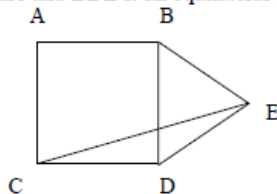
$$y = 9750$$

$$\text{So, } |x - y| = \text{Rs. } 750$$

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 8**

If ABDC is a square and BDE is an equilateral triangle, what is the measure of angle DEC?



- ☒ A) 15    B) 30    C) 20    D) 45

**Explanation:-**

Since BDE is an equilateral triangle on one side of the square each side of triangle BDE will be equal to the side of the square. Thus  $DC = ED$  i.e. triangle DCE is an isosceles triangle in which  $\angle DCE = \angle DEC$ . But  $m(\angle CDE) = m(\angle CDB + \angle BDE) = 90^\circ + 60^\circ = 150^\circ$ . Thus  $m(\angle DCE) = m(\angle DEC) = (30^\circ/2) = 15^\circ$ .

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 9**

A rectangular park 60 m long and 40 m wide has two concrete crossroads running in the middle of the park and rest of the park has been used as a lawn. If the area of the lawn is 2109 sq. m, then what is the width of the road?

- A) 2.91m    ☒ B) 3m    C) 5.82m    D) None of these

**Explanation:-**

The area of the park is Length  $\times$  Breadth. So,  $60 \times 40 = 2400$ . Now, as area of park - area of path = 2109, so, if  $b$  = width of the path, then  $100b - b^2 = 291$ , on solving  $b = 3$ . Hence width of the path = 3.



**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 10**

A person has kept Rs. 206 in his bag. The money is in the form of 50 paise, 25 paise, and 10 paise coins. The ratio of the 50 paise, 25 paise, and 10 paise coins is 5 : 9 : 4. Find the number of 50 paise coins?

- A) 150    ☒ B) 200    C) 250    D) 175

**Explanation:-** Ratio of 50p : 25p : 10p coins = 5:9:4

In one set, value of 50p coins =  $5 \times 50 = \text{Rs. } 2.50$

value of 25p coins =  $9 \times 25 = \text{Rs. } 2.25$

value of 10p coins =  $4 \times 10 = \text{Rs. } 0.40$

Therefore, 1 set has Rs. 5.15  $\Rightarrow$  total sets =  $206/5.15 = 40$

In 1 set no. of 50p coins = 5, in 40 sets =  $5 \times 40 = 200\text{coins}$

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 11**

A train travels a distance of 300 km at a constant speed. If the speed of the train is increased by 5 km an hour the journey would have taken 2 hours less. The original speed of the train was \_\_\_\_.

- ☒ A) 25 km/hr    B) 20 km/hr    C) 28 km/hr    D) 30 km/hr

**Explanation:-**

According to the question;

$$\frac{300}{x} - \frac{300}{(x+5)} = 2;$$

$$\frac{300x + 1500 - 300x}{x(x+5)} = 2;$$

$$2x^2 + 10x - 1500 = 0;$$

$$2x^2 + 60x - 50x - 1500 = 0;$$

$$(x + 30)(2x - 50) = 0;$$

$$x = -30, 25$$

Therefore, the original speed of the train is 25km/hr.

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 12**

12 men and 16 boys can do a piece of work in 5 days; 13 men and 24 boys can do it in 4 days, then the ratio of the daily work done by man to that of a boy is \_\_\_\_\_.

- ☒ A) 2 : 1    B) 3 : 1    C) 1 : 3    D) 5 : 4

**Explanation:-** We have  $(12m + 16b) \times 5 = (13m + 24b) \times 4$

$$\Rightarrow 60m + 80b = 52m + 96b$$

$$\Rightarrow 8m = 16b$$

$$\Rightarrow m : b = 2 : 1.$$



**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 13**

In how many ways can 21 identical books on Literature and 19 identical books on Nature be placed in a row on a shelf so that two books on Nature may not be together?

- A) 4620   B) 3672   ☒ C) 1540   D) None of the above

**Explanation:-**

When 21 books of Literature are arranged in a row, there will create 22 places. Now we have to place 19 books of Nature at these 22 places which can be done in  ${}^{22}C_{19} = 1540$  ways.

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 14**

A and B play a game where each is asked to select a number from 1 to 16. If the two numbers match, both of them win a prize. Find the probability that they will not win a prize in a single trial.

- A) 14/15   ☒ B) 15/16   C) 12/17   D) 12/13

**Explanation:-**

A and B win a prize, only if both A and B select the number. So, if A chooses a number, B has to select the same number. Hence, it is problem on dependent event.

Let A select a number, then  $P(A) = 1/16 =$  probability of A.

Now, B selects the same number after A has already selected that number.

Then,  $P(B/A) = 1/16 =$  dependent probability of B given A has occurred.

$P(AB) =$  Probability of winning a prize by both A and B is  $= P(A) \times P(B/A)$ .

$= (1/16) \times 1 = 1/16$ .

Hence, the probability of not winning a prize is  $= 1 - (1/16) = 15/16$ .

**DIRECTIONS for the question :** Solve the following question and mark the best possible option.

**Question No. : 15**

Find x if  $2 \log_b 5 + \frac{1}{2} \log_b 9 - \log_b 3 = \log_b x$

- A) 23   B) 22   ☒ C) 25   D) 24

**Explanation:-**

$$\log_b 5^2 + \log_b 9^{\frac{1}{2}} - \log_b 3 = \log_b x$$

$$\log_b 25 + \log_b 3 - \log_b 3 = \log_b x$$

$$\log_b 25 = \log_b x$$

$$x = 25$$



**DIRECTIONS for the question:** Given an input line the machine arranges the words and numbers step by step in a systematic manner as illustrated below :

Input :           subsidy 76 48 follow 35 next 63 must  
Step I :          35 subsidy 76 48 follow next 63 must  
Step II :         35 subsidy 48 76 follow next 63 must  
Step III :        35 subsidy 48 next 76 follow 63 must  
Step IV:         35 subsidy 48 next 63 76 follow must  
Step V :         35 subsidy 48 next 63 must 76 follow  
                    Output in Step V is the final output and Step V is the last step.

As per the rules followed in the above steps, find out in each of the following questions the appropriate step for the given input.

**Question No. : 16**

What will be the third step for the input "17 85 pearls garland 67 93 restriction judgement"?

- A) 17 restriction 67 pearls garland 85 93 judgement    B) 17 restriction 67 pearls 93 garland 85 judgement  
C) 17 restriction 85 pearls 67 garland 93 judgement    ☒ D) 17 restriction 67 pearls 85 garland 93 judgement    E) None of these

**Explanation:-**

For these types of questions immediately after seeing inputs, we check the last step. We see that there is some definite pattern of arrangement of words/digits is going on. Particularly in this questions right from the first step to the last step, we have rearranged the numbers in ascending order and words in alphabetically decreasing order. Also note that numbers and words are arranged alternately.

Input : 17 85 pearls garland 67 93 restriction judgement

1st step : 17 restriction 85 pearls garland 67 93 judgement

2nd step : 17 restriction 67 85 pearls garland 93 judgement

3rd step : 17 restriction 67 pearls 85 garland 93 judgement

So, 3rd step is given in option 4.



**DIRECTIONS for the question:** Given an input line the machine arranges the words and numbers step by step in a systematic manner as illustrated below :

Input :           subsidy 76 48 follow 35 next 63 must  
 Step I :         35 subsidy 76 48 follow next 63 must  
 Step II :        35 subsidy 48 76 follow next 63 must  
 Step III :       35 subsidy 48 next 76 follow 63 must  
 Step IV:        35 subsidy 48 next 63 76 follow must  
 Step V :         35 subsidy 48 next 63 must 76 follow  
 Output in Step V is the final output and Step V is the last step.

As per the rules followed in the above steps, find out in each of the following questions the appropriate step for the given input.

**Question No. : 17**

If the fourth step of an input is "35 wealth 52 task 72 57 jogging playground" what will definitely be the first step?

- A) task wealth 35 52 57 jogging 72 playground   B) wealth task 35 52 57 jogging 72 playground  
 C) wealth task 35 52 jogging 57 72 playground   ✓D) Cannot be determined   E) None of these

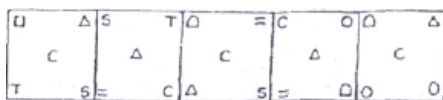
**Explanation:-**

For these types of questions immediately after seeing inputs, we check the last step. We see that there is some definite pattern of arrangement of words/digits is going on. Particularly in this questions right from the first step to the last step, we have rearranged the numbers in ascending order and words in alphabetically decreasing order. Also note that numbers and words are arranged alternately.

Be careful in these questions that any step backwards cannot be found definitely as there will always be more than one options available. Hence the answer will be cannot be determined.

**DIRECTIONS for the question:** In the question given below which one of the answer figures should come after the problem figures given, if the sequence were continued?

**Question No. : 18**



- A) B) C) D) ✓E)

**Explanation:-**

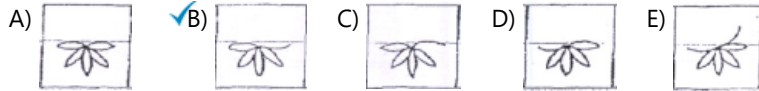
Studying the position of **C** we check that it is moving one step up and down diagonally so it should be placed in the bottom right corner and a new figure comes at one of the corners starting from bottom LHS and then the next new figure appears at the top left, then top right and so on i.e. it appears clockwise on new corners. So, answer is option 5.





**DIRECTIONS for the question:** In the question given below which one of the answer figures should come after the problem figures given, if the sequence were continued?

**Question No. : 19**

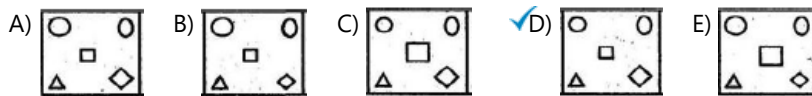
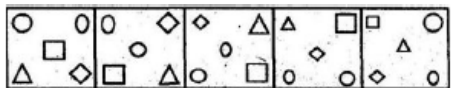


**Explanation:-**

Everytime a part of petal is added and the figure turns  $45^\circ$  and  $90^\circ$  anticlockwise alternatively and new petal part is added on the front while moving anticlockwise. Hence 2nd option is the next pattern

**DIRECTIONS for the question:** In the question given below which one of the answer figures should come after the problem figures given, if the sequence were continued?

**Question No. : 20**



**Explanation:-**

The symbol on the top right moves to the top left and size is reduced and the symbol on the top left moves to the middle. Therefore, option D is the next figure in the sequence.

**DIRECTIONS for the question:** Choose the word from the options which is most **Similar** in meaning to the given word.

**Question No. : 21**

**Accuse**

A) Belaud B) Exhilarating C) Implicate D) Announce

**Explanation:-**

Accuse means to charge with the fault, offense, or crime.

Belaud is to praise excessively.

Exhilarating means to enliven; invigorate;

Implicate is to show to be involved.

Announce means to make known publicly or officially; **So, option 3 is correct.**



**DIRECTIONS for the question:** Choose the word from the options which is **Opposite** in meaning to the given word.

**Question No. : 22**

Dutiful

A) Whimsical   B) pious   ✓C) Irresponsible   D) Reverence

**Explanation:-** Dutiful means performing the duties expected or required of one; characterized by doing one's duty .  
Whimsical is erratic; unpredicatble.  
Pious is having or showing a dutiful spirit of reverence for God or an earnest wish to fulfill religious obligations.  
Reverence means a feeling or attitude of deep respect tinged with awe.  
So,option 3 brings in the antonym to the given word.

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**DIRECTIONS for the question:** Choose the word from the options which is most **Similar** in meaning to the given word.

**Question No. : 23**

Bunk

A) Accuse   B) Reciprocate   C) Indecent   ✓D) Escape

**Explanation:-** Bunk means to abscond or escape from school or work. Escape is the most appropriate answer here.

**DIRECTIONS for the question:** Choose the word from the options which is **Opposite** in meaning to the given word.

**Question No. : 24**

Malleable

A) flexible   ✓B) rigid   C) weak   D) slippery

**Explanation:-** Malleable means easily influenced; pliable.  
So the antonym will be **RIGID**.

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**DIRECTIONS for the question:** Choose the word from the options which is **Opposite** in meaning to the given word.

**Question No. : 25**

Tolerable

A) Supportable   B) Acceptable   ✓C) Objectionable   D) Endurable

**Explanation:-** Tolerable means something that is able to be experienced without reactions or tolerated.

**Section : Technical**

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**DIRECTIONS for the question:** Mark the best option:

**Question No. : 26**

How many parameters are needed for minmax function?

- A) 1   B) 2   C) 3   ☒ D) 4

**Explanation:-**

There are four parameters in minmax function. They are value1 and value2, initializer and comparison function.

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**DIRECTIONS for the question:** Mark the best option:

**Question No. : 27**

What is the output of this program?

```
#include
#include
using namespace std;
bool myfn(int i, int j)
{
    return i < j;
}
int main ()
{
    int myints[ ] = {3, 7, 2, 5, 6, 4, 9};
    cout << *min_element(myints, myints + 7, myfn) << '\n';
    cout << *max_element(myints, myints + 7, myfn) << '\n';
    return 0;
}
```

- ☒ A) 2 9   B) 2 7   C) 3 9   D) 3 5

**Explanation:-** In this program, minimum value and maximum value of a range will be found out, therefore output will be : 2 9

**DIRECTIONS for the question:** Mark the best option:

**Question No. : 28**

If  $(675.625)_{10} = (X)_{16}$ . Then value of X is

- A)  $(2B3.A)_{16}$    ☒ B)  $(2A3.A)_{16}$    C)  $(2C3.C)_{16}$    D)  $(2A3.B)_{16}$

**Explanation:-**

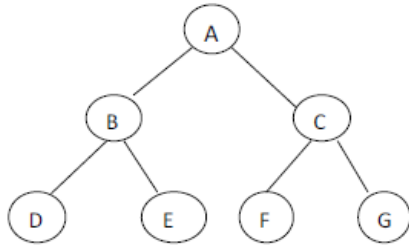
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**DIRECTIONS for the question:** Mark the best option:

**Question No. : 29**

For the given binary tree above what would be the preorder and inorder respectively?



- A) A, B, E, D, E, C, F, G and D, B, E, A, F, G, C    B) A, B, E, D, F, C, G and B, D, E, A, F, G, C  
✓C) A, B, D, E, C, F, G and D, B, E, A, F, C, G    D) A, B, D, E, C, F, G and D, B, A, E, F, G, C

**Explanation:-**

**DIRECTIONS for the question:** Mark the best option:

**Question No. : 30**

Consider the following

- I. Input device
- II. Arithmetic and logic unit
- III. Control unit
- IV. Auxillary unit
- V. Main memory
- VI. Active hub

Which of these form the CPU?

- ✓A) II, III and V    B) I, IV and VI    C) II, IV and V    D) II, III and VI

**Explanation:-**

**DIRECTIONS for the question:** Mark the best option:

**Question No. : 31**

Assertion (A): The visual Display unit can be used to view the keyed in data

Reason (R) : VDU is also called the terminal

A) Both A and R are true and R is the correct explanation of A.

- ✓B) Both A and B are true but R is not the correct explanation of A.    C) A is true but R is false    D) A is false but R is true

**Explanation:-**



**DIRECTIONS for the question:** Mark the best option:

**Question No. : 32**

For quick sort algorithms which of the following algorithm design technique is used:

- A) Greedy   B) Backtracking   ☒ C) Divide and conquer   D) Dynamic programming

**Explanation:-**

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**DIRECTIONS for the question:** Mark the best option:

**Question No. : 33**

A PASCAL function is defined as comput (var X: real ; Y: real): real; begin

A : = 3.0;

B : = 3.0;

Comput: = 5.0 \* X + (Y – X);

End;

If this function was called

A : = 7.0;

B : = 1.0;

R : = comput(A,B);

R would be?

- A) 31   B) 15   C) 13   ☒ D) 29

**Explanation:-**

**DIRECTIONS for the question:** Mark the best option:

**Question No. : 34**

The code written below will lead output:

```
Void main(
```

```
{
```

```
int suite=1;
```

```
Switch (suite);
```

```
{
```

```
Case 0: printf ("Its Night");
```

```
Case 1: printf ("Its Midnight");
```

```
}
```

```
}
```

- ☒ A) Error in the code   B) Its Night   C) Its Midnight   D) None of these

**Explanation:-**

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**DIRECTIONS for the question:** Mark the best option:

**Question No. : 35**

The code written below will give the output as:

```
#include
#include
Void main()
{
Char suit = 3;
{
Case 1 : printf ("AMCAT");
Case 2 : printf ("All students are intelligent");
Default : printf ("All are MCQs");
}
Printf ("do you like AMCAT?");
}
```

A) AMCAT   B) All students are intelligent   ☒ C) All are MCQs   D) do you like AMCAT?

**Explanation:-**

**Section : Coding**

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**DIRECTIONS for the question:** Solve the following question:

**Question No. : 36**

A)   B)   C)   D)

**Explanation:-**

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**DIRECTIONS for the question:** Solve the following question:

**Question No. : 37**

A)   B)   C)   D)

**Explanation:-**