

Cisco Model Paper

1. If the sum of three consecutive even numbers is 44 more than the average of these numbers, then the largest of these numbers is?

- A. 20
- B. 24
- C. 22
- D. None of these

Explanation:

Let the smallest of these number be x . The other two numbers are $(x + 2)$ and $(x + 4)$.

$$\Rightarrow x + (x + 2) + (x + 4) = (X + (X+2) + (x+4)) / 3 + 44$$

$$\Rightarrow 3x + 3*(x + 2) + 3*(x + 4) = x + (x + 2) + (x + 4) + 132$$

$$\Rightarrow 9x + 18 = 3x + 138$$

$$\Rightarrow 6x = 120$$

$$\Rightarrow x = 20$$

Therefore, the largest number is 24.

2. Two trains 140 meters and 120 meters are running in the same direction with speeds 40 kmph and 60 kmph respectively. In what time will the faster train pass the slower one?

- A. 0.60 minutes
- B. 0.36 minutes
- C. 0.78 minutes
- D. 0.42 minutes

Explanation:

Total distance = addition of length of the two trains = $140 + 120 = 260$ meters

As the two trains are travelling in the same direction, their relative speed is:

$$\Rightarrow v = |v_1 - v_2| = |40 - 60| = 20 \text{ km/hr.} = 20*1000/60 = 1000/3 \text{ meters/min}$$

$$\Rightarrow t = 260/ 1000*3$$

$$\Rightarrow t = 0.78 \text{ minutes}$$

3. When a student weighing 45 kgs left a class, the average weight of the remaining 59 students increased by 200g. What is the average weight of the remaining 59 students?

- A. 55
- B. 56
- C. 57
- D. 58

Explanation:

Let the average weight of the 59 students be A .

So, the total weight of the 59 of them will be $59*A$.

Given that when the weight of this student who left is added, the total weight of the class = $59A + 45$

When this student is also included, the average weight decreases by 0.2 kgs.

So,

$$\Rightarrow (59A+45)/60 = A-0.2.$$

$$\Rightarrow 59A + 45 = 60A - 12.$$

$$\Rightarrow 45 + 12 = 60A - 59A.$$

=> A = 57.

4. A and B go cycling in the same direction with speeds of 6 km/hr. and 12 km/hr. A car from behind passes them in 9 and 10 seconds respectively. What is the speed of the car?

- A. 22 km/hr.
- B. 33 km/hr.
- C. 66 km/hr.
- D. 44 km/hr.

Explanation:

The relative speed of A and B is 6 km/hr. = 1.67 m/s

As the car passes A after 10s, the distance between A and B after 10s (i.e. at 11th second) is the distance covered by car in 1 second.

Therefore, at $t = 11$, $d = 1.67 * 11$

$d = 18.33$ m

$v = d/t = 18.33/1 = 18.33$ m/s

$v = 66$ km/hr.

5. A sum of Rs. 4000 amounts to Rs. 4600 in 5 years at a certain rate of simple interest. What would be the amount, if the rate of interest is increased by 3 %?

- A. Rs. 4900
- B. Rs. 5000
- C. Rs. 5200
- D. Rs. 5600
- E. None of these

Explanation:

Given,

Principal = Rs. 4000, Amount = Principal + SI = Rs. 4600

SI = Amount – Principal = 4600 – 4000 = Rs. 600

Time = T = 5 years and SI = Rs. 600

Since, $SI = PRT/100$

=> $600 = 4000 * R * 5/100$

=> $600 = 200R$

=> $R = 3$ % p.a.

Now the new interest rate is = 3% + 3% = 6 % p.a.

=> $SI = PRT/100 = 4000 * 6 * 5/100 =$ Rs. 1200

Hence the required amount = Principal + SI

= 4000 + 1200 = 5200.

6. For a candidate to clear an examination, he/she must score 55% marks. If he/she gets 120 and fails by 78 marks, the total marks for the examination is

- A. 300
- B. 360
- C. 400
- D. 320

Explanation:

Here the mark obtained by the candidate is 120 and the candidate fails by 78 marks.

Therefore the passing marks is $(120+78) = 198$

Let the total marks be x . Then,

$$\Rightarrow 55/100 * x = 198$$

$$\Rightarrow x = 360.$$

7. A man on tour travels first 160 km at 64 km/hr. and the next 160 km at 80 km/hr. The average speed for the first 320 km of the tour is:

A. 35.55 km/hr.

B. 36 km/hr.

C. 71.11 km/hr.

D. 71 km/hr.

Explanation:

$$\text{Total time taken} = (160/64 + 160/80) \text{ hrs.} = 9/2 \text{ hrs.}$$

$$\therefore \text{Average speed} = (320 \times 2/9) \text{ km/hr.} = 71.11 \text{ km/hr.}$$

8. Shyam can do a job in 20 days, Ram in 30 days and Singhal in 60 days. If Shyam is helped by Ram and Singhal every 3rd day, how many days will it take for them to complete the job?

A. 12

B. 16

C. 15

D. 10

Explanation:

As Shyam is helped by Ram and Singhal every third day, Shyam works for 3 days while Ram and Singhal work for 1 day in every 3 days.

Therefore, the amount of work done in 3 days by Shyam, Ram and Singhal:

$$\Rightarrow 3/20 + 1/30 + 1/60$$

$$\Rightarrow 1/5 \text{ of the job.}$$

Hence, it will take them 5 times the amount of time = $3 \times 5 = 15$ days.

9. A trader has 200 kg of sugar, out of which he sells some with 10% profit and the rest with 25% profit. He gains 15% on the whole. Find the quantity of sugar sold at 25% profit?

A. 120 kg

B. 96.5 kg

C. 84 kg

D. 67 kg

E. None of these

Explanation:

Let CP of each kg. of sugar = Rs.1.

Cost Price of 200 kg of sugar = Rs.200.

Let quantity of sugar sold with 25% profit be X .

Therefore, $(200 - X)$ kg of sugar sold at a profit of 10%

Then,

$$\Rightarrow (125/100 * X) + 110/100 (200 - X) = 115/100 * 200$$

$$\Rightarrow 125X + 110(200 - X) = 115 * 200$$

$$\Rightarrow 125X + 22000 - 110X = 23000$$

$$\Rightarrow 125X - 110X = 23000 - 22000$$

$$\Rightarrow 15X = 1000$$

$$\Rightarrow X = 1000/15$$

$$\Rightarrow X = 66.66 \text{ kg} \approx 67 \text{ (approx.)}$$

10. P, Q, R subscribe Rs. 50,000 for a business. P subscribes Rs. 4000 more than Q and Q Rs. 5000 more than R. Out of a total profit of Rs. 25,000, what will be P's share?

- A. Rs. 8400
- B. Rs. 10,500
- C. Rs. 13,600
- D. Rs. 14,700

Explanation:

Let amount subscribed for R be x.

Therefore, Q = x + 5000 and P = x + 5000 + 4000 = x + 9000

So, x + x + 5000 + x + 9000 = 50000

$$\Rightarrow 3x = 36000$$

$$\Rightarrow x = 12000$$

$$\Rightarrow P: Q: R = 21000: 17000: 12000 = 21: 17: 12$$

Hence, P's share = 25000 X (21/50) = Rs. 10,500.

11. Neha's mother was four times her age 12 years ago. She will be twice as old as Neha 12 years from now. What is the present age of Neha's mother?

- A. 49 years
- B. 57 years
- C. 60 years
- D. 65 years
- E. None of these

Explanation:

Let Neha's present age be 'x' years.

Her age 12 years ago = (x - 12) years

Therefore, her mother's age 12 years ago = 4(x - 12)

Her mother's present age = 4x - 48 + 12 = 4x - 36

Neha's age after 12 years = x + 12

Her mother's age after 12 years = 4x - 36 + 12 = 4x - 24

$$\Rightarrow 4x - 24 = 2(x + 12)$$

$$\Rightarrow 4x - 2x = 24 + 24$$

$$\Rightarrow x = 24$$

Therefore, Neha's present age = 24

Hence, Her mother's present age = 4x - 36 = 4(24) - 36 = 60 years.

12. Two trains running in opposite directions cross a man standing on the platform in 27 seconds and 17 seconds respectively. If they cross each other in 23 seconds, what is the ratio of their speeds?

- A. Insufficient data

- B. 3: 1
- C. 1: 3
- D. 3: 2

Explanation:

Let the speed of the trains be x and y respectively

length of train1 = $27x$

length of train2 = $17y$

Relative speed = $x + y$

Time taken to cross each other = 23 s

$$\Rightarrow (27x + 17y)/(x+y) = 23$$

$$\Rightarrow (27x + 17y) = 23(x+y)$$

$$\Rightarrow 4x = 6y$$

$$\Rightarrow x/y = 6/4 = 3/2.$$

Cisco Verbal Ability Test

It is time, we looked at the latent causes. Where does the strength of India lie? Not in numbers, not necessarily in our moral stands on international issues. In modern times, the strength of a nation lies in its achievements in science and technology. This is not to say that other fields do not count.

In the five decades after independence, we have yet to demonstrate our originality in applied science and technology. Though Japan also started like us, yet by cultivating the technology of the West, the Japanese adapted, improved and displayed originality in several areas of science and technology.

The generation

which is at the helm of affairs in science and in our country after independence mostly consisted of self-seekers. By and large with a few exceptions. The science and technology managers in India concentrated in gaining power and influence.

They loved publicity. Most of them stopped doing science while they managed science. Things would have been better had they been humble enough to acknowledge the difference between doing and managing science. Instead they claimed they were the foremost in science and technology, simply because they

were at the helm of affairs. As a result, they ceased to inspire the younger lot. India continues to be a borrower of science and technology, even though its potential for originality is substantial.

Our achievements in nuclear science and technology may be dazzling to our people. But, in worth and originality, they are ordinary and routine. While our own people remain ignorant the people of other countries know all about the pretensions to knowledge of our nuclear science and technology managers. Our subtle way of sabotaging our nuclear goals is to help hollow persons reach and

remain at the helm of affairs. International bodies come in as handy tools in that subtle process. The veil of secrecy effectively protects the mismanagement in our nuclear establishments. The talk of national security comes as an easy weapon to prevent any probe into mismanagement. On nuclear matters the media in our country, by and large avoid the mismatch between promise and hence performance in the nuclear field does not get exposed as much as the mismanagement in other fields.

13. What does the author mean by “doing” science?
- A. Demonstrating exaggerated performance without achieving the desired level.
 - B. Managing effectively the administrative functions involved in the power game.
 - C. Concentrating on such researches which have very low practical utility.
 - D. Displaying genuine acumen and performance in scientific studies.

Answer: B.

14. Which of the following is the commonality between the Indian and the Japanese scientists?
- A. Both have displayed originally in applied sciences
 - B. Both have displayed and advancement of substandard quality
 - C. Both have displayed greed for influence and power
 - D. Both have displayed remarkable just for publicity

Answer: D.

15. Synonym:

Eulogistic

- A. unmannerly
- B. wanderer
- C. reproachful
- D. insulting
- E. praising

Answer: E.

16. Antonym:

EPHEMERAL:

- A. Passing
- B. Sensuous
- C. Permanent
- D. Distasteful

Answer: C.

17. Error Spotting:

The woman that had (a)/ kidnapped a child has now (b)/ been apprehended and is being (c)/ held in the city's jail(d).

- A. a
- B. b
- C. c
- D. d

E. No Error

Explanation:

Replace "the city's jail" with " the city jail".

18. Fill in the Blank:

His over-enthusiasm has now been _____ because of his _____ to mobilize the required support.

- A. Subdued; failure
- B. Provoked; failure
- C. Dampened; failure
- D. Developed; want

Answer: A.

19. Fill in the Blank:

Anything in this shop can be bought, _____

- A. can't we?
- B. an't it?
- C. can't all?
- D. an't anything?

Answer: B.

20. Sentence Arrangement:

(X) It is a general tendency among human beings that as our familiarity with a person increases, our aversion towards him too starts going higher.

(A) when the relationship grows deeper, it brings the shortcomings and deficiencies of a person to the fore front.

(B) As the relationship starts, the good qualities of a person come into notice and these attract the other towards him and his other qualities of lesser grade remain in the rear.

(C) The real qualities of a person are observed only when relationship with him becomes closer and go to the level of intimacy.

(D) No person on this earth can claim himself or herself to be free from defects and shortcomings.

(Y) A person by nature brings forth his better instincts and traits to show to others and tends to hide his weak points and shortcomings.

- A. CBAD
- B. BCAD
- C. CABD
- D. BDCA

Answer: B.

Cisco Technical Test

21. Given two sorted lists of size m and n respectively. The number of comparisons needed in the worst case by the merge sort algorithm will be?

- A. mn
- B. max(m,n)
- C. min(m,n)
- D. m+n-1

Answer: D.

22. Which indicates pre-order traversal?

- A. Left sub-tree, Right sub-tree and root
- B. Right sub-tree, Left sub-tree and root
- C. Root, Left sub-tree, Right sub-tree
- D. Right sub-tree, root, Left sub-tree

Answer: C.

23. What is the output of following program?

```
#include
int main()
{
int n;
for (n = 9; n!=0; n--)
printf("n = %d", n--);
return 0;
}
```

- A. 9 8 7 6 5 4 3 2 1
- B. 9 7 5 3 1
- C. infinite loop
- D. 9 7 5 3

Explanation:

The variable n will never evaluate to 0 so the loop will run for infinite times.

24. How many times LogicGuns will be printed?

```
#include
int main()
{
int i = -5;
while (i <= 5)
{
if (i >= 0)
break;
else
{
i++;
}
```

```
continue;
}
printf("LogicGuns");
}
return 0;
}
```

- A. 5 times
- B. 10 times
- C. infinite times
- D. 0 times

Explanation:

The loop will break when i becomes 0 so nothing gets printed.

25. What will be the output of the following program on GCC compiler?

```
#include
int main() {
int x=4, y, z;
y = --x;
z = x--;
printf("%d, %d, %d\n", x, y, z);
return 0;
}
```

- A. 4, 3, 3
- B. 4, 3, 2
- C. 3, 3, 2
- D. 2, 3, 3

Explanation:

In the statement " y = --x ", the value of x is decremented and gets stored in y i.e. y = 3.

In the statement " z = x--", the value of x i.e. 3 is stored in z then, it is decremented and becomes x=2.

26. Which of the following operation is illegal in structures?

- A. Typecasting of structure
- B. Pointer to a variable of same structure
- C. Dynamic allocation of memory for structure
- D. All of the mentioned

Answer: A.

27. How many enumerators will exist if four threads are simultaneously working on an ArrayList object?

- A. 1
- B. 2
- C. 3
- D. 4

Answer: D.

28. Which constructs an anonymous inner class instance?

- A. `Runnable r = new Runnable() { };`
- B. `Runnable r = new Runnable(public void run() { });`
- C. `Runnable r = new Runnable { public void run(){}};`
- D. `System.out.println(new Runnable() {public void run() { }});`

Explanation:

D is correct. It defines an anonymous inner class instance, which also means it creates an instance of that new anonymous class at the same time. The anonymous class is an implementer of the Runnable interface, so it must override the run() method of Runnable.

Option A is incorrect because it doesn't override the run() method, so it violates the rules of interface implementation.

Option B and C use incorrect syntax.

29. Which method must be defined by a class implementing the java.lang.Runnable interface?

- A. `void run()`
- B. `public void run()`
- C. `public void start()`
- D. `void run(int priority)`

Explanation:

Option B is correct because in an interface all methods are abstract by default therefore they must be overridden by the implementing class. The Runnable interface only contains 1 method, the void run() method therefore it must be implemented.

30. What will be the output of the following program on GCC?

```
#include
int message();
int main() {
int x,y,z;
x=y=z=-1;
z=++x && ++y || ++z;
printf(" x=%d y=%d z=%d\n", x,y,z);
return 0;
}
```

- A. `x=0 y=-1 z=0`
- B. `x=0 y=-1 z=1`
- C. `x=0 y=1 z=0`
- D. Compiler Error

Explanation:

The operator '&&' has higher priority than the operator '||'. In the expression " z= (++x && ++y) || ++z", the value of x is incremented to 0 i.e. false value. Since, the 1st condition of && evaluates to false, 2nd condition of && operator is not tested and 'y' remains unchanged.

Now, expression becomes "z = 0 || ++z". If the first condition of || operator evaluates to false, the 2nd condition of the operator will be tested also. Thus, value of z is incremented to 0. Finally, the result of the expression i.e. 0 is assigned to z.