Cocubes Aptitude Questions with Answers

1) A and B are two alloys in which ratios of gold and copper are 5:3 and 5:11 respectively. If these equally amount of two alloys are melted and made alloy C. What will be the ratio of gold and copper in alloy C?

a) 20:21 b) 21:20 c) 15:17 d) 17:16

Ans: c

Given the ratio of Gold and Copper in Alloy A = 5 : 3, Amount of Gold in Alloy A = 5/8 and Amount of Copper in A = 3/8 Ratio of Gold and Copper in Alloy B =5 :11, Amount of Gold In Alloy B = 5/16 and Amount of Copper in B = 11/16 Amount of Gold In C = (Amount of gold in A + Amount of gold in B)= (5/8) +(5/16) = (10+5)/16 = 15/16.Amount of Copper in C = Amount of Copper in A + Amount of Copper in B= (3/8) + (11/6) = 17/16.So, Ratio of Gold and Copper in C =15/16 :17/16 =15 :16

2) A, B and C can all together do piece of work in 20 days, in which B takes twice as long as A and C together do the work and C takes twice as long as A and B together take to do the work. In how many days B can alone do the work?

a) 40 b) 35 c) 60 d) 45

Ans: c

(A+C) in x days so B completes in 2x days then (1/x) + (1/2x) = 1/20 solve, x = 30, so B 2x =60days

3) A project manager hired 15 men to complete a project in 40 days. However, after 30 days, he realized that only 1/2 of the work is completed. How many more men does he need to hire to complete the project on time?

a) 15 b) 30 c) 20 d) 25

Ans: a

15 Men complete a work in 40days. 15*40/1 = (40-30)10*x/(1/2)=x=30 Men Men required=30-15=15 Men.

4) The cost price of item B is Rs. 200/- more than the cost price of item A. Item A was sold at a profit of 20% and item B was sold at a loss of 30%. If the respective ratio of selling prices of items A and B is 6 :7, what is the cost price of item B?

a) Rs. 520 b) Rs. 430 c) Rs. 400 d) Rs. 360

Ans: c

Let the CP of item A be x, CP of item B is x+200.(120/100*x)/(x+200)*70/100 = 6/7 120x/(x+200)*70=6/720 x/10(x+200) = 1, X=Rs. 200. CP of item B is 200+200 = Rs. 400.

5) In a certain store, the profit is 270% of the cost. If the cost increases by 30% but the selling price remains constant, approximately what percentage of the selling price is the profit.

a) 68% b) 72% c) 50% d) 65%

Ans: d

Let C.P.= Rs. 100. Then, Profit = Rs. 270,S.P. = Rs. 370. New C.P. = 130% of Rs. 100 = Rs. 130 New S.P. = Rs. 370, Profit = Rs. (370 130) = Rs. 240 Required percentage = (240/370) * 100 = 64.86 =65%(approx)

6) A certain sum is invested for certain time. It amounts to Rs. 600 at 10% per annum. But when invested at 5% per annum, it amounts to Rs. 400. Find the time.

a) 40 years b) 75 years c) 50 years d) 60 years

Ans: a

600-P=P*10*t/100 >1===>6000-10 P=Pt 400-P=P*5*t/100->2===>8000-20 P=Pt Equate 1 and 2, 6000-10 P=8000-20 P==>P=200 Substitute P in 1 then 400 = 200*5*t/100 ==> 40 years

7) A vessel is filled with liquid, 3 parts of which are water and 5 parts syrup. What part of the mixture must be drawn off and replaced with water so that the mixture may be half water and half syrup?

a) 7/11 b) 6/7 c) 1/5 d) 2/7

Ans: c

Suppose the vessel initially contains 8 liters of liquid.Let x liters of this liquid be replaced with water.Water in new mixture = (3-3x/8+x)Syrup in new mixture = (5-5x/8)Then (3-3x/8+x) = (5-5x/8)5x + 24 = 40 5x10x=16==>x=8/5 So part of mixture replaced is 8/5*1/8=1/5

8) Seats for Mathematics, Physics and Biology in a school are in the ratio 5 :7 :8. There is a proposal to increase these seats by 40%, 50% and 75% respectively. What will be the ratio of increased seats?

a) 2 : 3 : 4 b) 6 : 7 : 8 c) 6 :8 :9 d) 7 : 6: 9

Ans: a

Originally, let the number of seats for Mathematics, Physics and Biology be 5x, 7x and 8x respectively. Number of increased seats are (140% of 5x), (150% of 7x) and (175% of 8x).[140/(100 * 5x)] , [150/(100 * 7x) and [175/(100 * 8x)7x, 21x/2 and 14x The required ratio = 7x : 21x/2 : 14x14x :21x :28x2 :3 :4

9) In a bag, there are coins of 25 p, 10 p and 5 p in the ratio of1 :2 : 3. If there is Rs. 30 in all, how many 5 p coins are there?

a) 50 b) 100 c) 150 d) 200

Ans: c

Let the number of 25 p, 10 p and 5 p coins be x, 2x, 3x respectively.Then, sum of their values = Rs. [25x/100 + 10*2x/100 + 5*3x/100] = Rs. 60x/10060x/100 = 30 x = 50 Hence, the number of 5p coins = (3 x 50) = 150

10) The angle of elevation of the top of a tower from certain point is 30. If the observer moves 20m towards the tower, the angle of elevation of the top increases by 15. Find the height of the tower.

a) ?3 m b) 5?3 m c) 10?3 m d) 20?3 m

Ans: c

11) Efficiency of A is 25% more then B and B takes 25 days to complete a piece of work. A started a work alone and then B joined her 5 days before actual completion of the work. For how many days A worked alone?

a) 9 b) 11c) 10 d) 15

Ans: b

Efficiency (A : B) = 5 : 4 Number of days(A : B) = 4x : 5x = 4x : 25 Number of days required by A to finish the work alone = 4x = 4 x 5 = 20. A and B work together for last 5 days = 5 x, 9 = 45% Efficiency of A = 5% and Bs efficiency = 4%No. of days taken by A to complete 55% work = 55/5 = 11 days

12) A person borrows Rs. 3000 for 2 years at 5% p.a. simple interest. He immediately lends it to another person at 6 % p.a for 2 years. Find his gain in the transaction per year.

a) Rs. 42 b) Rs. 39.25 c) 35 d) 37.5

Ans: d

Gain in 2 yrs = [(3000*25/4*2/100)-(3000*2*5/100)] 375-300=75. Gain in 1yr=75/2=37.5

13) Two spheres of their radius in the ratio 4 : 3. Find its volumes ratio?

a) 64 : 26 b) 64 : 25 c)64 :27 d)64 :23

Ans: c

R - radius of larger sphere; r - radius of smaller sphere Sphere volume (V) = 4/3 ?R3 : 4/3 ? r3= 43 : 33= 64 : 27

14) There are three pipes, A, B and C, attached to container. A and B can fill the container alone in 20 and 30 mins, respectively whereas C can empty the container alone in 45 mins. The three pipes are kept opened alone for one minute each in the the order A, B and C. The same order is followed subsequently. In how many minutes will the reservoir be full?

a) 25 min b) 35 min c) 20 min d) 47 min

Ans: d

LCM of 20, 30 and 45 is 180 A : 20 - 9 units (i.e., 180/20)B :30 - 6 unitsC : 5 - 4 units1st Minute => A is opened => fills 9 L2nd Minute => B is opened =>fills another 6 L3rd Minute => C is opened => empties 4L Hence every 3 minutes => (9 + 6 4) = 11 litres are filled into the container. So in 45 minutes (11 15 =) 165 litres are filled. In the 46th minute A is opened and it fills 9litres. In the 47th minute B is opened and it fills 6litres. Hence the container will be full in 47 minutes.

15) A discount of 20% is given on the marked price of an article. The shopkeeper charges sales tax of 10% on the discounted price. If the selling price be Rs 1848, what is the marked price (in rupees) of the article?

a) 2500 b) 3200 c) 3600 d) 2100

Ans: d

Let the MP be x, then x* 80/100(20%discount)*110/100(10%sales) =1848X=2100

16) A man arranges to pay off a debt of Rs 3600 by 40 annual installments which are in A.P. When 30 of the installments are paid he dies leaving one-third of the debt unpaid.The value of the 8th installment is:

a) Rs. 35 b) Rs. 50 c) Rs. 65 d) Rs. 70

Ans: c

Let the first installment be 'a' and the common difference between any two consecutive installments be 'd', using the formula for the sum of an A.P:S = n/2 [2a + (n-1)d]3600 = 40/2 [2a + 39d]180 = 2a + 39d

And 2400 = 30/2 [2a + 29d]160 = 2a + 29d On solving both the equations we get, d = 2 and a = 51.Value of 8^{th}installment = 51 + (8-1)2 = Rs. 65

17) A student was asked to divide a number by 6 and add 12 to the quotient. He, however first added 12 to the number and then divided it by 6, getting 112 as the answer. The correct answer should have been:

a) 122 b) 118 c) 114 d) 124

Ans: a

Let the number be x, then operations undertook by the student: (x + 12)/6 = 112x = 660, hence 660 /6 + 12 = 122

Directions (18-19): These questions are to be answered on the basis of the following table giving the bank rates for 100 units of various foreign currencies converted to Indian rupees.

18) A man wants to convert Rs. 10,000 into foreign currency. He wants to buy the foreign currency which gives him the maximum number of units. Which currency should he buy?

a) Pound Sterling b) U.A.E. Dirham c) Japanese Yen d) French Franc

Ans: c

19) What is the approximate ratio of the buying rate of Australian Dollar of that to the U.S. Dollar?

a) 15 b) 1.02 c) 1.09 d) 0.67

Ans: d

Required ratio = 2080/3120 = 208//312 =0.67

20) The average of 13 numbers is 60. Average of the first 7 of them is 57 and that of the last 7 is 61. Find the 8th number?

a) 46 b) 32 c) 68 d) 51

Ans: a

Sum of all the 13 numbers = 13 * 60 = 780,Sum of the first 7 of them = 7 * 57 = 399,Sum of the last 7 of them = 7 * 61 = 427,So, the 8th number = 427 + 399 - 780 = 46.

Cocubes Logical Reasoning Questions

Direction for questions 1-5: In each of the following questions, two statements numbered I and II are given. There may because and effect relationship between the two statements. These two statements may be the effect of the same cause or independent causes. These statements may be independent causes without having any relationship. Read both the statements in each question and mark your answer.

1) Statements:

I. Majority of the students in the college expressed their opinion against the college authority's decision to break away from the university and become autonomous.

II. The university authorities have expressed their inability to provide grants to its constituent colleges.

a) Statement I is the cause and statement II is its effect

b) Statement II is the cause and statement I is its effect

c) Both the statements I and II are independent causes

d) Both the statements I and II are effects of independent causes

e) Both the statements I and II are effects of some common cause

Ans: b

Clearly, the university's decision to refuse grant to the colleges must have triggered the college authority to become autonomous.

2) Statements:

I. Police; resorted to lathi-charge to disperse the unlawful gathering of large number of people.

II. The citizens' forum called a general strike in protest against the police atrocities.

a) Statement I is the cause and statement II is its effect

b) Statement II is the cause and statement I is its effect

c) Both the statements I and II are independent causes

d) Both the statements I and II are effects of independent causes

e) Both the statements I and II are effects of some common cause

Ans: a

Clearly, the people's mass protest against the police might have instigated the latter to indulge in lathi-charge to disperse the mob.

3) Statements:

I.The performance of most of the students in final exam of class X in the schools run by the Government was excellent.

II. Many teachers of the Government schools left the school and joined private schools.

a) Statement I is the cause and statement II is its effect

b) Statement II is the cause and statement I is its effect

c) Both the statements I and II are independent causes

d) Both the statements I and II are effects of independent causes

e) Both the statements I and II are effects of some common cause

Ans: d

The students of government schools performing well in the examinations and the teachers of government schools leaving their jobs to join private schools are two separate situations that must have been triggered by independent causes.

4) Statements:

I. The conditions of most of the national highways are very bad.

iI. Government has now sanctioned a huge amount of money to maintain the national highways.

a) Statement I is the cause and statement II is its effect

b) Statement II is the cause and statement I is its effect

c) Both the statements I and II are independent causes

d) Both the statements I and II are effects of independent causes

e) Both the statements I and II are effects of some common cause

Ans: a

5) Statements:

I. The life today is too fast, demanding and full of variety in all aspects which at times beads to stressful situations.

II.Number of suicide cases among teenagers is on increase.

a) Statement I is the cause and statement II is its effect

b) Statement II is the cause and statement I is its effect

c) Both the statements I and II are independent causes

d) Both the statements I and II are effects of independent causes

e) Both the statements I and II are effects of some common cause

Ans: a

Stress B in everyday life is a major cause of frustration among the youth and is bound to lead them to take harsh steps as suicide.

6) Jose is working with a realtor to find a location for the toy store he plans to open in his town. He is looking for a place that is either in, or not too far from, the center of town and one that would attract the right kind of foot traffic. Which of the following locations should Joses realtor call to his attention?

a) a storefront in a new high-rise building near the train station in the center of town whose occupants are mainly young, childless professionals who use the train to commute to their offices each day.

b) a little shop three blocks away from the towns main street, located across the street from an elementary school and next door to an ice cream store.

c) a stand-alone storefront on a quiet residential street ten blocks away from the towns center.

d) a storefront in a small strip mall located on the outskirts of town that is also occupied by a pharmacy and a dry cleaner

Ans: b This option is both near the center of town and in a location (near a school and an ice cream store) where children and their parents are sure to be around. This is the only option that meets both of Marks requirements.

7) Four of the following five are like in a certain way based on their positions in the above arrangement and so from a group. Which is the one that does not belong to that group?

a) D % M

b) K 4 #

c) W Z 7

d) 6 8

Ans: b

8) What should come in place of question mark (?) in the following series based on the above arrangement?3K4, $E9, FBH, ?

a) 5 7 W

b) 7 W Z

c) 5 7 @

d) I @

Ans: d

9) Find the odd one out: 7, 8, 12, 20, 37, 62

a) 37

b) 62

c) 12

d) 20

Ans: d

The sequence is 7 + 1^2=8, 8 + 2^2=12, 12 + 3^2=21,

10) In a certain code BODE is written as @ $ * ? and EAT is written as ? How can DEBATE be written in that code?

a) ? $ @ ?

b) * ? @ ?

c) @ ? * $ @ ?

d) ? * $ @ ?

e) Cannot be determined

Ans: b

11) If in a certain language FASHION is coded as FOIHSAN, how can PROBLEM be coded in that code?

a) ROBLEMP

b)PRBOELM

c) PELBORM

d) PRBOELM

Ans: c

12) Select the alternative in which the specified components of the key figure (X) are found.

a) 1

b) 2

c) 3

d) 4

Ans: d

13) Select the alternative in which the specified components of the key figure (X) are found

a) 1

b) 2

c) 3

d) 4

Ans: c

14) Find out how the key figure (X) look will like after rotation.

a) 1

b) 2

c) 3

d) 4

Ans: d

15) Find out how the key figure (X) look will like after rotation.

a) 1

b) 2

c) 3

d) 4

Ans: c

16) What is the number of triangles that can be formed whose vertices are the vertices of an octagon but have only one side common with that of octagon?

a) 64

b) 32

c) 24

d) 16

Ans: b

17) A Tiebreaker is an additional contest or period of play designed to establish a winner among tied contestants. Which situation below is the best example of a Tiebreaker?

a) At halftime, the score is tied at 28.

b) Mary and Megan have each scored three goals in the game.

c) The referee tosses a coin to decide which team will have possession of the ball first.

d) The Sharks and the Bears each finished with 14 points, and they are now battling it out in a five-minute overtime

Ans: d

18) Reentry occurs when a person leaves his or her social system for a period of time and then returns. Which situation below best describes Reentry?

a) When he is offered a better paying position, Jacob leaves the restaurant he manages to manage a new restaurant on the other side of town.

b) Catherine is spending her junior year of college studying abroad in France.

c) Malcolm is readjusting to civilian life after two years of overseas military service.

d) After several miserable months, Sharon decides that she can no longer share an apartment with her roommate Hilary.

Ans: c

19) Pointing to Manju, Raju said, The son of her only brother is the brother of my wife. How is Manju related to Raju?

a) Mothers sister

b) Grandmother

c) Mother-in-law

d) Sister of father-in-law

e) Maternal aunt

Ans: d

Brother of Rajus wife- Rajus brother-in-law; Son of Manjus brother is the brother-in-law of Raju. So Manjus brother is Rajus father-in-law ie, Manju is the sister of Rajus father-in-law.

20) A is the husband of B. E is the daughter of C. A is the father of C. How is B related to E?

a) Mother

b) Grandmother

c) Aunt

d) Cousin

Ans: b

Couples A-B; A is the father of C; Cs daughter is E. So, Es grandmother is B.

Cocubes Verbal Ability Questions with Answers

Questions 1 - 4:

The Kingdom of Spain was created in 1492 with the unification of the Kingdom of Castile and the Kingdom of Aragon. For the next three centuries, Spain was the most important colonial power in the world. It was the most powerful state in Europe and the foremost global power during the 16th century and the greater part of the 17th century. Spain established a vast empire in the Americas, stretching from California to Patagonia, and colonies in the western Pacific. Spains European wars, however, led to economic damage, and the latter part of the 17th century saw a gradual decline of power under an increasingly neglectful and inept Habsburg regime. The decline culminated in the War of the Spanish Succession, where Spains decline from the position of a leading Western power to that of a secondary one, was confirmed, although it remained the leading colonial power.

The eighteenth century saw a new dynasty, the Bourbons, which directed considerable effort towards the institutional renewal of the state, with some success, peaking in a successful involvement in the American War of Independence. The end of the eighteenth and the start of the nineteenth centuries saw turmoil unleashed throughout Europe by the French Revolutionary and Napoleonic Wars, which finally led to a French occupation of much of the continent, including Spain. This triggered a successful but devastating war of independence that shattered the country and created an opening for what would ultimately be the successful independence of Spains mainland American colonies. Following a period of growing political instability in the early twentieth century, in 1936 Spain was plunged into a bloody civil war. The war ended in a nationalist dictatorship, led by Francisco Franco which controlled the Spanish government until 1975. Select the correct answer option based on the passage.

1) What was the result of Napoleonic wars?

a) small part of the continent was occupied by French people

b) Spain was occupied by the French

c) war of independence was unable to yield any positive result

d) American colonies were destroyed after the war

Ans: b

2) What is the meaning of the term culminated?

a) Follow a particular path

b) Guide or transform

c) Reach the highest point

d) Introduce on a grand scale

Ans: b

3) What is the summary of the passage?

a) The rise and fall of a national empire

b) The downfall of successive regimes in Spain

c) The history of Spain

d) Spain in the eighteenth century

Ans: c

4) What occurred in the latter part of 17th century?

a) War of succession confirmed the leading position of Spain

b) Spain was no longer regarded as the ruling colonial power

c) A vast empire was established in Europe

d) Power steadily declined under Habsburgregime

Ans: d

Directions for Questions 5 - 8:

In response to the recent rise in gas prices, we are once again hearing calls for the government to do something to force prices lower. But no matter what the price of gasoline is, such calls are wrong. All market fluctuations in the price of gasoline, up or down, are a good thing and none of the governments business. In the realm of business, a higher price means that firms will only purchase oil or gasoline to the extent that they can make profitable use of it at those prices. An efficient airline will still be able to offer low prices while using high-priced jet fuel; a less efficient airline may not be able to.

A company in China or India that uses oil to run highly efficient factories can make profitable use of oil at $70 a barrel; their laggard competitors may not be able to. There is no moral or economic justification for any politician or consumer to declare market prices too high, and to use the government to force lower prices. Doing so violates both the rights of gasoline producers and their productive customers to set voluntary prices and thus causes destructive shortages. The government is right in taking action if an oil company provably threatens or harms a persons property. But to impose

huge costs on oil companies and their customers in the name of preserving untouched nature is unconscionable. What should the government do about gasoline prices? Get its hands out of the market and keep them off. From the Passage above answer the following questions:

5) How do high oil prices affect companies?

a) Efficient companies can make profitable use of these prices

b) Inefficient factories are provided subsidies by the government

c) It provides stability for the fluctuating market

d) There is a marginal effect on profits

Ans: a

6) What is the meaning of laggard?

a) Complicate situations for ones benefit

b) Move or respond slowly

c) Respond fast in crucial circumstances

d) Increase efficiency in short period of time

Ans: b

7) What is the conflict regarding market fluctuation in prices?

a) Oil prices are being lowered forcefully by companies

b) Companies are making no effort to stabilize prices

c) Importance of government intervention is negligible, contrary to popular belief

d)Market is suffering from governments future plans for control

Ans: d

8) Why should the government not intervene in lowering the prices?

a) Market prices are governed by monopolistic competition

b) Rights of producers will be violated with the intervention

c) Massive costs to companies are not advisable during financial crisis

d) Preserving oil for future generations should be in the hands of organizations

Ans: b

9) This arrangement is between Fred and _____.

a) he

b) him

c) I

d) his

Ans: b

The pronoun object form in the option is him.

10) Samantha bought the English dictionary _____ difficult words.

a) look up

b) to look up

c) looking up

d) looked up

Ans: b

Infinitives are used to express the idea of in order to do something. In order to find the meaning of the difficult words, Samantha bought the English dictionary.

11) After _____ Pakistan for harbouring terrorists in his August speech, Trump recently praised Pakistan for the help it provided in securing the release of an American woman and her family from the Haqqani networks _____.

a) excusing, acquittal

b)scolding, sovereignty

c) castigating, captivity

d) exonerating, license

Ans: c

castigating = reprimand (someone) severely; captivity = the condition of being imprisoned or confined.

12) Read each sentence to find out whether there is any grammatical error in it. The error, if any will be in one part of the sentence

a) We discussed about the problem so thoroughly

b) on the eve of the examination

c) that I found it very easy to work it out.

d) No error.

Ans: a

13) Choose the most suitable alternative in accordance with the correct use of tense

a) By tomorrow afternoon the plane will be taking off for Moscow

b) All are correct

c) By tomorrow afternoon the plane will have take off for Moscow

d) By tomorrow afternoon the plane will take off for Moscow

Ans: d

14) Fill in the blanks with the most suitable option. _____ the police immediately.

a) To call

b) Call

c) Been calling

d) Called

Ans: b

15) Choose the explanation that catches the spirit of the idiom given in each question: - A Panacea

a) An injection that serves as a life line

b) A lecture full of precepts

c) A strong drug that induces sleep

d) A single cure for all diseases or troubles

Ans: d

16) Find the meaning: EMBEZZLE

a) Misappropriate

b) Balance

c) Remunerate

d) Clear

Ans: a

17) Find the meaning of:CANNY

a) Obstinate

b) Handsome

c) Clever

d) Stout

Ans: c

18) Find the meaning of:ADVERSITY

a) Failure

b) Helplessness

c) Misfortune

d) Crisis

Ans: c

19) Find the opposite of:RELINQUISH

Abdicate

Renounce

Possess

Deny

Ans: c

20) Find the opposite of:FRAUDULENT

a) Candid

b) Direct

c) Forthright

d) Genuine

Ans: d

Cocubes Coding Questions with Answers

1) Count the number of co-prime pairs in an array. (Any two numbers whose GCD is 1 are be called as co-prime)

Input:

The first line contains an integer T, total number of elements. Then follow T elements.

Output:

Count the number of co-prime pairs in an array.

Constraints:

1 ? T ? 25

1 ? elements ? 100

Sample Input and Output:

Input 1:

3

1 2 3

Output 1:

3

Here, Co-prime pairs are (1, 2), (2, 3), (1, 3)

Input 2:

4

4 8 3 9

Output 2:

4

Here, Co-prime pairs are (4, 3), (8, 3), (4, 9), (8, 9)

```
#include<stdio.h>
int coprime(int a, int b)
{
int gcd;
while ( a != 0 )
{
gcd = a; a = b%a; b = gcd;
}
if(gcd == 1)
return 1;
else
return 0;
}
int count_pairs(int arr[], int n)
{
int count = 0;
for (int i = 0; i < n - 1; i++)
{
for (int j = i + 1; j < n; j++)
{
if (coprime(arr[i], arr[j]))
   count++;
       }
}
return count;
}

int main()
{
int n;
scanf("%d", &n);
int a[25], i;
for(i=0; i<n; i++)
scanf("%d", &a[i]);
printf("%d", count_pairs(a, n));
return 0;
}
```

2) Search for Nth Occurrence

Given an array, number to search (say e1), and occurrence (say n), print the index of the nth occurrence of e1 in the array. If e1 does not occur n times, then print the index as -1.

Input and Output:

Get the size of an array and get elements one by one. Input the number to be searched and occurrence. For example, 7 => Size of an array 1 4 6 7 6 3 6 => array elements 6 => number to be searched 3 => 3rd occurrence of number 6 Output: 6 Explanation: Number 6, 3rd occurrence position is 6

Sample Input and Output:

Input:

7

1 4 6 7 6 3 6

6

3

Output:

6

```
#include<stdio.h>
int main()
{
int a[100],n,i,e1,size,count=0;
scanf("%d",&size);
for(i=0;i<size;i++)
scanf("%d",&a[i]);
scanf("%d",&e1);
scanf("%d",&n);
for(i=0;i<size;i++)
{
if(e1==a[i])
count++;
//If 'n'th occurrence found then print it's index and exit.
if(count==n)
{
printf("%d",i);
return 0;
}
}
//If 'n' occurrence not found then print '-1'.
```

```
printf("%d",-1);
return 0;
}
```

3) Search for an element in an array:

Program to search for an element in the given array.

Input and Output:

The input consists of n + 2 lines. The first line consists a single integer n, The next n lines consist of 1 integer element part of the array. The last line consists of an integer to be searched. Output found or missing based on whether the element is present in the array or not. Note: max value of n is 100.

Sample Input and Output:

Input 1:

3

1 2 3

6

Output 1: Missing

Input 2:

3

1 2 3

2

Output 2: Found

```
#include<stdio.h>
#define MAX_SIZE 20
```

```
int main()
{
int n, i, j, min_index, array[MAX_SIZE], x;
scanf("%d", &n);
for(i = 0; i < n; i++)
scanf("%d", &array[i]);
scanf("%d", &x);
for(i = 0; i < n; i++)
{
if(x == array[i])
{
printf("Foundn");
return 0;
}
}
printf("Missingn");
return 0;
}
```

4) Second largest number

Input:

The first line contains an integer T, total number of elements. Then follow T integers.

Output:

Display the second largest among the given T integers.

Constraints:

1 ? T ? 1000

1 ? integers ? 1000000

Sample Input and Output:

Input:

7

23 45 7 34 25 25 89

Output:

```
#include<stdio.h>
int main()
{
int a[50], size, i, j = 0, big, sec_big;
scanf("%d", &size);
for(i=0; i<size; i++)
scanf("%d", &a[i]);
big=a[0];
for(i=1;i<size;i++)
{
if(big<a[i])
{
big=a[i];
j = i;
}
}
sec_big =a[size-j-1];
for(i=1;i<size;i++)
{
if(sec_big <a[i] && j != i)
sec_big =a[i];
}
printf("%d", sec_big);
return 0;
}
```

5) Search index in a sorted array:

Program to find the target value in a two-dimensional matrix.

Input and Output:

Get a target element and return its coordinates. If the value didn't exist, the program had to return (-1,-1).The first line of input is the sizeof row and column, followed rxc elements. The third line of input is the element to be searched in the rxc matrix.

Sample Input and Output:

Input 1:

4 2

0 9 8 7 6 5 4 3

3

Output 1:

(3, 1)

```
#include<stdio.h>
int main()
{
int i, j, count = 0;
int arr[10][10], search, r, c;
scanf("%d %d", &r, &c);
for (i = 0; i < r; i++)
{
for (j = 0; j < c; j++)
scanf("%d", &arr[i][j]);
}
scanf("%d", &search);
for (i = 0; i < r; i++)
{
for (j = 0; j < c; j++)
{
if (arr[i][j] == search)
{
printf("(%d , %d)n", i, j);
count++;
}
}
}
if (count == 0)
printf("(-1,-1)");
return 0;
}
```

Cocubes Programming Questions with Answers

1) Predict the output:

```
#include <stdio.h>
  void main()
  {
    int i = 0;
    do
    {
      printf(“CoCubes”);
    } while (i != 0);
  }
```

a) Nothing

b) C is printed infinite times

c) CoCubes

d) Run time error

Ans: c

2) Predict the output :

```
#include <stdio.h>
  void main()
  {
    int k = 5;
    int *p = &k;
    int **m = &p;
    **m = 6;
    printf(“%d\n”, k);
  }
```

a) 5

b) Compile time error

c) 6

d) Junk

Ans: c

3) Predict the output/error:

```
#include <stdio.h>
 void main()
 {
   int a[3] = {1, 2, 3};
   int *p = a;
   int **r = &p;
   printf("%p %p", *r, a);
 }
```

a) Different address is printed

b) 1 2

c) 1 1

d) Same address is printed

Ans: d

4) What are the advantages of passing arguments by reference?

a) Changes to parameter values within the function also affect the original arguments.

b) There is need to copy parameter values (i.e. less memory used)

c) There is no need to call constructors for parameters (i.e. faster)

d) All of the mentioned

Ans: d

5) Pick out the correct statement.

a) A derived class's constructor cannot explicitly invokes its base class's constructor

b) A derived class's destructor cannot invoke its base class's destructor

c) A derived class’s destructor can invoke its base class’s destructor

d) None of the mentioned

Ans: b

6) Which constructor will initialize the base class data member?

a) derived class

b) base class

c) class

d) none of the mentioned

Ans: b

7) Which of the following applications may use a stack?

a) A parentheses balancing program

b) Tracking of local variables at run time

c) Compiler Syntax Analyzer

d) All of the mentioned

Ans: d

8) Which of the following points is/are true about Linked List data structure when it is compared with array

a) Arrays have better cache locality that can make them better in terms of performance

b) It is easy to insert and delete elements in Linked List

c) Random access is not allowed in a typical implementation of Linked Lists

d) All of the mentioned

Ans: d

9) Which of the following sorting algorithms can be used to sort a random linked list with minimum time complexity?

a) Insertion Sort

b) Quick Sort

c) Heap Sort

d) Merge Sort

Ans: d

10) Depth First Search is equivalent to which of the traversal in the Binary Trees?

a) Pre-order Traversal

b) Post-order Traversal

c) Level-order Traversal

d) In-order Traversal

Ans: a

11) Where the result of an arithmetic and logical operation are stored?

a) In Accumulator

b) In Cache Memory

c) In Instruction Registry

d) In ROM

Ans: a

12) ISP stands for _____

a) Instruction Set Processor

b) Information Standard Processing

c) Interchange Standard Protocol

d) Interrupt Service Procedure

Ans: a

13) The registers, ALU and the interconnection between them are collectively called as _____

a) process route

b) information trail

c) information path

d) data path

Ans: d

14) The maximum frequency at which digital data can be applied to gate is caled

a) Operating speed

b) Propagation speed

c) Binary level transaction period

d) Charging time

Ans: a

15) A comparison between serial and parallel adder reveals that serial order

a) is slower

b) is faster

c) operates at the same speed as parallel adder

d) is more complicated

Ans: a

16) Which of this is not a constituent of residential telephone line?

a) A high-speed downstream channel

b) A medium-speed downstream channel

c) A low-speed downstream channel

d) None of the mentioned

Ans: c

17) Most packet switches use this principle

a) Stop and wait

b) Store and forward

c) Both Stop and wait and Store and forward

d) None of the mentioned

Ans: b

18) What is function of logic gate?

a) It makes logic decisions

b) It works on binary algebra

c) It alternates between 0 and 1 values

d) None of these

Ans: a

19) What is the main difference between calloc() and malloc()?

a) calloc() takes a single argument while malloc() needs two arguments

b) malloc() takes a single argument while calloc() needs two arguments

c) malloc() initializes the allocated memory to ZERO

d) calloc() initializes the allocated memory to NULL

Ans: b

20) Only functions of the class can access the data of the class and they(functions) provides the interface between data, objects and the program. This kind isolation of the data from direct access by the program is called _____ .

a) Data Abstraction

b) Data Hiding

c) Data Binding

d) Data Encapsulation

Ans: b

Cocubes Preassess 2017:Coding Questions-1

Section: Algorithm to code

Cocubes preassess 2018 – English previous year Question Papers

Question 1: You are given a function,

```
int OctalToDecimal(int n);
int OctalToDecimal(int n);
static int OctalToDecimal(int n);
static int OctalToDecimal(int n);
```

The function takes an integer number, each of whose digits lies between 0 to 7, thus forming an octal number, as input. Implement the function to return its decimal equivalent. The algorithm to convert the octal number to its decimal equivalent is as follows:-

Multiply each digit of the octal number starting with the right most digit and moving leftwards, with increasing powers of 8 starting with 8^0.**Example:Input:**

127**Output:**

87**Explanation:**

While converting 127 to its decimal equivalent, we start from the right, multiplying

$7 * 8^0 = 7$

$2 * 8^1 = 16$

$1 * 8^2 = 64$Adding up the results together, we get 7 + 16 + 64 = 87, which is the output.

Your Code:

```
1. int OctalToDecimal(int n)
2. {
3. /* Write your code here. */
4. long int result=0;
5. int i=0;
6. int a=n;
7. while(a!=0)
8. {
9. result=result+((a % 10)* pow(8,i++));
10.        a=a/10;
11.        }
12.        return result;
13.        }
```

Section: Complete Code

Question 2: A linked list can be represented by the following structure:-

```
struct Node
{
char data;
struct Node* next;
```

```
};struct Node
{
char data;
struct Node* next;
};class Node
{
public char data;
public Node next;
}class Node
{
public char data;
public Node next;
```
}You are given a function,
`struct Node* ReArrangeVowelsAndConsonants(struct Node* head);struct Node* ReArrangeVowelsAndConsonants(struct Node* head);static Node ReArrangeVowelsAndConsonants(Node head);static Node ReArrangeVowelsAndConsonants(Node head);`The pointer 'head' points to the start of a linked list. Implement the function to rearrange and return the same list so that all the vowels occupy the first half of the list and all the consonants occupy the second half.**Note:**
1. Do not create a new list, modify the existing list.
2. Relative ordering of vowels and consonants should not change among themselves.
3. You may assume that the list is of even length and half the nodes contain vowels and the other half contain consonants.
4. If the list is NULL, then return NULL.**Example:**
Input:
a -> k -> r -> i -> t -> e -> o -> m**Output:**
a – > i – > e -> o -> k -> r -> t -> m**Explanation:**
The consonants k and r in the first half of the list are moved to the second half of the list, while vowels e and o in the second half of the list are moved to first half of the list, keeping the relative ordering same.

Your Code:

```
1. struct Node* ReArrangeVowelsAndConsonants(struct Node* head)
2. {
3. /* Write your code here. */
4. struct node *new=NULL , **dst, **src;
5. dst=&new;
6. for(src= &head; *src; )
7. {
8. struct node* this;
9. this=*src;
10.         if (!Is_VOWEL(this))
11.         {
12.         src=&(*src)->next;
```

```
13.         continue;
14.         }
15.         *src=this->next;
16.         this->next= *dst;
17.         *dst = this;
18.         dst=& (*dst)->next;
19.         }
20.         *dst= lst;
21.         return new;
22.         }
23.         int main (void)
24.         {
25.         struct node ar[]={ {ar+1, 'S'},{ar+2, 'T'},{ar+3, 'A'},{ar+1, 'C'}}
26.         }
```

Cocubes Preassess 2018-2019: Analytical reasoning questions-2

Cocubes Questions – Computer Fundamentals previous year question papers

Q1.Which of the following words can be formed using the set of alphabets given below?

{a, a, l, e, z, o, u, g, h, n, k}

- Enough
- cough
- Plough
- Ought

Ans:Enough

Q2.In which of the following sentences vowels occurs the most number of times?

- Simplicity is the best policy.
- Be loyal to your country.
- The early bird catches the worm.
- How many girls are sitting around you?

Ans:How many girls are sitting around you?

Read the following information carefully and answer the questions that follow.

6 friends Arjun, Bhaskar, Chandu, Omkar, Ester, and Faran are studying in same school. They were given ranks both for academics and sports.

(i) Arjun is not the best player while Bhaskar didn't get the first rank in academics.
(ii) The person with the lowest rank in academics is the best player.
(iii) Bhaskar is good at academics than Omkar, whose performance in academics is better than Faran.
(iv) Arjun is poor in studies than Omkar but plays better than Omkar.
(v) Faran plays better than Bhaskar and Bhaskar plays better than Chandu.
(vi) Faran studies better than Arjun while Omkar plays better than Faran.

Cocubes preassess 2018 – English previous year Question Papers

Q3.Who is the best sports player?

- Arjun
- Ester
- Bhaskar
- Can't be determined

Ans:Ester

Q4.What is the rank of Bhaskar in sports?

- third
- fourth
- fifth
- can't say

Ans: fifth

Q5.Who performed best in academics?

- Bhaskar
- Ester
- Chandu
- Omkar

Ans :Chandu

Read the following information carefully and answer the questions that follow.

Five friends P, Q, R, S and T like different subjects among Mathematics, History, Social Studies, Science, and Physics.

(1) Q likes Social Studies and P does not like Science.
(2) T does not like History. R likes Mathematics.
(3) T does not like Science.

Q6.Who likes Science?

- T
- R
- P
- S

Ans: S

Q7.Who likes Physics?

- P
- S
- T
- Q

Ans: T

Q8.Which among the following is definitely true?

- P likes Physics
- S likes History
- T likes History
- Q does not like Science

Ans: Q does not like Science

Q9.Who likes History?

- P
- S
- T
- Q

Ans: P

Cocubes Questions – Computer Fundamentals previous year question papers

Read the following information carefully and answer the questions that are given below it:

A, B, C, D, E, F and G are sitting on a bench facing North.

(i) Exactly three and exactly five persons are sitting to the left of D and E respectively.
(ii) B is the only one in between F and C.
(iii) F and G are at the extreme ends.

Q10.Who is sitting at the middle?

- D
- A
- B
- C

Ans:D

Q11.Who is sitting at the extreme right end?

- F
- E
- B
- G

Ans: G

Q12.Who is sitting to the immediate left of D?

- B
- F
- C
- A

Ans: C

Q13.Who is sitting to the immediate right of A?

- E
- G
- D
- C

Ans: E

Q14.Below is given a question followed by two statements numbered I and II. The question may or may not be answered with the help of these statements. You have to decide if these statements are sufficient to answer the question.

Question: What is the height of Mount Leverest?

Statements:
I. The height of Mount Everest is 12,500 meters.
II. The height of Mount Leverest is half of that of Mount Everest.

- Only one of the statements, alone, is sufficient to answer the question but other statement is not.
- Both statements I and II together are sufficient to answer the question asked but neither statement alone is sufficient.
- each statement alone is sufficient to answer the question.
- Statements I and II together are not sufficient to answer the question asked and additional data to the problem is needed.

Ans:Both statements I and II together are sufficient to answer the question asked but neither statement alone is sufficient.

Cocubes preassess 2018 – English previous year Question Papers

Q15.Below is given a question followed by two statements numbered I and II. The question may or may not be answered with the help of these statements. You have to decide if these statements are sufficient to answer the question.

Question: How is Supri related to Syam?

Statements:
I. Shalu is the friend of Supri.
II. Supri is the sister of Syam.

- Only one of the statements, alone, is sufficient to answer the question but other statement is not.
- Both statements I and II together are sufficient to answer the question asked but neither statement alone is sufficient.
- Each statement alone is sufficient to answer the question.
- Statements I and II together are not sufficient to answer the question asked and additional data to the problem is needed.

ans: Only one of the statements, alone, is sufficient to answer the question but other statement is not.

Cocubes Questions – Computer Fundamentals previous year question papers

Q16.Below are given statements followed by two conclusions. Take the given statements to be true, even if they contradict commonly known facts and determine the conclusions that logically follows from the statements.

Statements:
I. Some Fruits are Bananas.
II. Some Bananas are Tasty.

Conclusions:
I. All Tasty are Bananas.
II. Some Bananas are Fruits.

- Only conclusion I follows
- Only conclusion II follows
- Both conclusion I and conclusion II follow
- Neither conclusion I nor conclusion II follows

Ans: Only conclusion II follows

Q17.Below are given statements followed by two conclusions. Take the given statements to be true, even if they contradict commonly known facts and determine the conclusions that logically follows from the statements.

Statements:
I. Some physical games are sports.
II. Some sports are played in Stadiums.
III. Cricket is played in Stadiums.

Conclusions:
I. Cricket is a physical game.
II. Cricket is a sport.

- Only conclusion I follows
- Only conclusion II follows
- Both conclusion I and conclusion II follow
- Neither conclusion I nor conclusion II follows

Ans: Neither conclusion I nor conclusion II follows

Q18.Below are given statements followed by two conclusions. Take the given statements to be true, even if they contradict commonly known facts and determine the conclusions that logically follows from the statements.

Statements:
I. Some mobiles are smartphones.
II. Some smartphones are Android programmed devices.
III. All the Android programmed devices are expensive.

Conclusions:
I. Some Android programmed devices are smartphones.
II. Some mobiles are expensive.

- Only conclusion I follows
- Only conclusion II follows
- Both conclusion I and conclusion II follow
- Neither conclusion I nor conclusion II follows

Ans: Only conclusion I follows

Q19.Below are given statements followed by two conclusions. Take the given statements to be true, even if they contradict commonly known facts and determine the conclusions that logically follows from the statements.

Statements:
I. All files are documents.
II. Some documents are Word files.
III. All Word files are Excel files.

Conclusions:
I. Some Excel files are documents.
II. Some Word files are files.

- Only conclusion I follows
- Only conclusion II follows
- Both conclusion I and conclusion II follow
- Neither conclusion I nor conclusion II follows

Ans: Only conclusion I follows

Q20.In the following question(s), symbols **++**, **$$**, **??**, **!!** and **&&** are used with different meanings as follows:

'P **++** Q' means 'P is not smaller than Q'.
'P **$$** Q' means 'P is not greater than Q'.
'P **??** Q' means 'P is neither greater than nor equal to Q'.
'P **!!** Q' means 'P is neither greater than nor equal to Q'.
'P **&&** Q' means 'P is neither smaller than nor greater than Q'.Now assuming in the following question the given statements to be true, find which of the conclusions given below them is/are definitely true and give your answer accordingly.**Statements:**
I. A **??** B
II. B **&&** C
III. C ++ D

Conclusions:
I. A ++ D
II. A **??** C

- Only conclusion I follows
- Only conclusion II follows
- Both conclusion I and conclusion II follow
- Neither conclusion I nor conclusion II follows

Ans: Only conclusion II follows

Q21.In the following question(s), the symbols <>, **<#>**, **<%>**, **<&>** and </> are used with the following meanings illustrated.

'A <> B' means 'A is not greater than B'.
'A **<#>** B' means 'A is neither greater than nor equal to B'.
'A **<%>** B' means 'A is not smaller than B'.
'A **<&>** B' means 'A is neither smaller than nor equal to B'.
'A </> B' means 'A is neither smaller than nor greater than B'.

Now assuming in the following question the given statements to be true, find which of the conclusions given below them is/are definitely true and give your answer accordingly.

Statements:
I. P **<&>** Q
II. Q **<%>** R
III. R **<#>** S

Conclusions:
I. R **<#>** P
II. R **<&>** S
III. S **<&>** P

- Only conclusion I follows
- Only conclusion II follows
- Both conclusion I and conclusion II follow
- Neither conclusion I nor conclusion II follows

Ans: Only conclusion I follows

Cocubes preassess 2018 – English previous year Question Papers

Q22.Below is given a statement followed by two conclusions. Take the given statement to be true, even if it contradicts commonly known facts and determine the conclusions that logically follows from the statement.

Statement:
Raju must reach railway station by 5.00 am.

Conclusions:
I. The train is scheduled at 5.00 am.
II. The station will be closed after 5.00 am.

- Only conclusion I follows
- Only conclusion II follows
- Both conclusion I and conclusion II follow
- Neither conclusion I nor conclusion II follows

Ans: Neither conclusion I nor conclusion II follows

Q23.Below is given statement followed by two conclusions. Take the given statement to be true, even if it contradicts commonly known facts and determine the conclusion/s that logically follow/s from the statement.

Statement:
The average age of students in a class is 15 years.

Conclusions:
I. The number of students in the class is 15 and sum of their ages is 225.
II. 5 members are above 15 years and 5 members are below 15 years exactly.

- Only conclusion I follows
- Only conclusion II follows
- Both conclusion I and conclusion II follow
- Neither conclusion I nor conclusion II follows

Ans: Neither conclusion I nor conclusion II follows

Q24.Below are given statements followed by two conclusions. Take the given statements to be true, even if they contradict commonly known facts and determine the conclusion/s that logically follow/s from the statements.

Statements:
I. All biscuits are chocolates.
II. All chocolates are toffees.

Conclusions:
I. Some chocolates are definitely biscuits.
II. No chocolate is a biscuit.

- Only conclusion I follows
- Only conclusion II follows

- Both conclusion I and conclusion II follow
- Neither conclusion I nor conclusion II follows

Ans: Only conclusion I follows

Q25.Below are given statements followed by two conclusions. Take the given statements to be true, even if they contradict commonly known facts and determine the conclusion/s that logically follow/s from the statements.

Statements:
I. All Himalayas are hills.
II. Some hills are peaks.

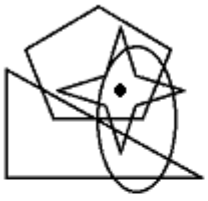
Conclusions:
I. Some hills are definitely the Himalayas.
II. Some peaks are hills.

- Only conclusion I follows
- Only conclusion II follows
- Both conclusion I and conclusion II follow
- Neither conclusion I nor conclusion II follows

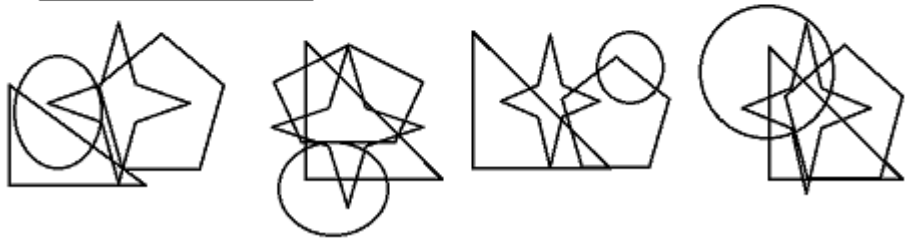
Ans:Both conclusion I and conclusion II follow

Q26.In the following question, the **Problem Figure** is given with dot(s) placed in it. Out of the four **Response Figure** (1), (2), (3), (4), only one is to be chosen as to make possible the placement of the dot(s) satisfying the same conditions as in the **Problem Figure**. Mark the answer accordingly.

Problem Figure:



Response Figure:



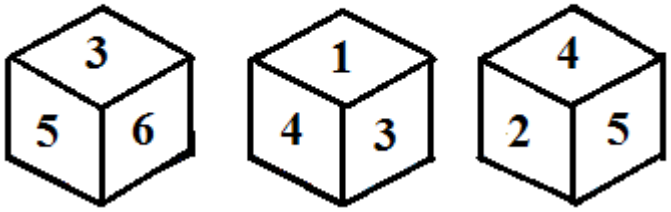
(1) **(2)** **(3)** **(4)**

- 1
- 2
- 3
- 4

Ans:4

Q27.The following figures shows the faces of an unbiased dice numbered with 1 to 6, then which number is on the opposite face to the one numbered with 1?

Problem Figure:



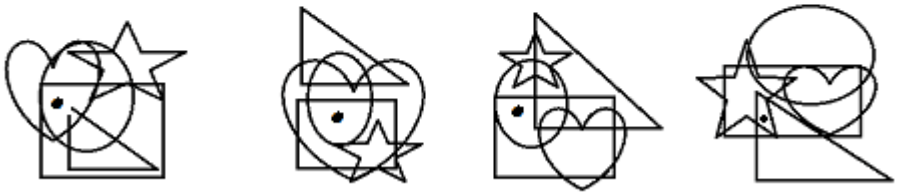
- 2
- 4
- 3
- 5

Ans:5

Q28.In the following question, the **Problem Figure** is given with dot(s) placed in it. Out of the four **Response Figure** (1), (2), (3), (4), only one is to be chosen as to make possible the placement of the dot(s) satisfying the same conditions as in the **Problem Figure**. Mark the answer accordingly.

Problem Figure:

Response Figure:



(1) **(2)** **(3)** **(4)**

- 1
- 2
- 3
- 4

Ans: 4

Q29.From the **Response Figure** identify which should complete the sequence given in **Problem Figure**.

Problem Figure:

SUPER	USPRE	SHELL	HSELL	PEARL	?

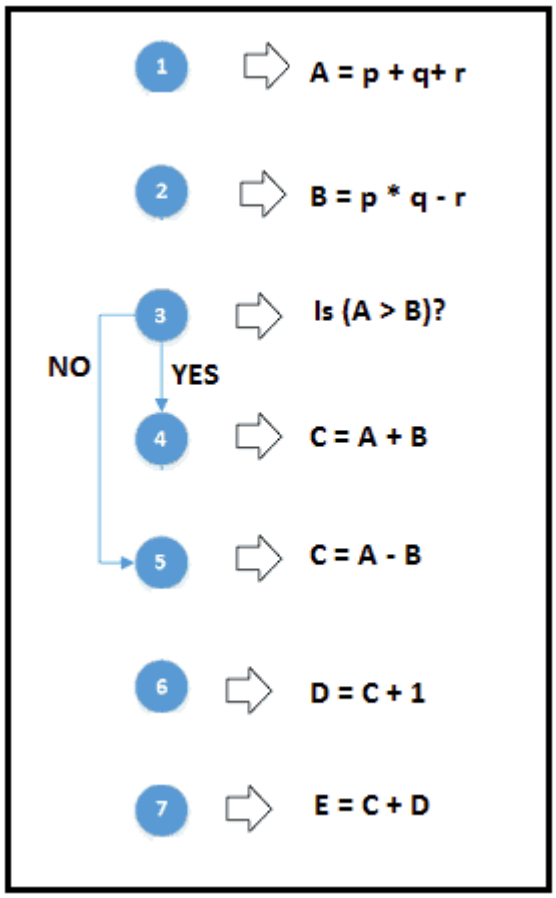
Response Figure:

LRAEP	EPALR	LRAEP	RLAEP
(1)	(2)	(3)	(4)

- 1
- 2
- 3
- 4

Ans 2

Follow the instructions depicted in the diagram given below and answer the questions that follow.



Cocubes Questions – Computer Fundamentals previous year question papers

Q30.As per the flow given below, what will be the value of "D" for the values of p = 1, q = 2, r = 3?

1 → 2 → 3 → 6

- 6
- 5
- 7
- 8

Ans: 6

Q31.As per the flow given below, what will be the value of “E” for the values of p = 1, q = 2, r = 3?

1 → 2 → 3 → 6 → 7

- 10
- 11
- 12
- 9

Ans:11

Q32.As per the flow given below, what will be the value of “(A + B + C + D + E)” for the values of p = 1, q = 2, r = 3?

1 → 2 → 3 → 6 → 7

- 24
- 25
- 26
- 27

ans 27

Q33.If in a certain code language the word “GRADUATE” is coded as “SHYVGAHW”, then how would “SCHOOL” be coded in the same code language?

- GWRMMP
- GWRMNP
- GWSMMP
- GVRMMP

Ans GWRMMP

Q34.Find the missing term(s) in the series given below.

21, 30, **?**, 104, 185, 306, 475

- 55
- 56
- 54
- 61

Ans: 55

Q35.Find the missing term(s) in the series given below.

35, 260, **?**, 550, 631, 680, 705

- 429
- 414
- 420
- 445

ans 429

Cocubes preassess 2018 – English previous year Question Papers

Q36.If in a certain code language “EXPLORER” is coded as “SFQNMQWD”, then how would “DISCOVER” be coded in the same code language?

- SFUNDTHC
- SFUNDTHD
- SFUNDTIC
- SFUNDSHC

Ans: SFUNDTHC

Q37.Find the missing term(s) in the series given below.

22, 191, **?**, 328, 364, 445, 509, 558

- 207
- 228
- 215
- 198

Ans:207

Q38.Find the missing term(s) in the series given below.

55, 98, **?**, 184, 235, 270, 325

- 145
- 146
- 153
- 135

Ans 145

Q39.If in a certain code language “INNOVATIVE” is coded as “ELMMRVERGZ”, then how would “FILAMENT” be coded in the same code language?

- ZORUGMVN
- ZORUGMVM
- ZORUGMUN
- ZOSUGMVN

Ans:ZORUGMVN

Cocubes Questions – Computer Fundamentals previous year question papers

Q40.In the following question/s, you are given a set of two related words, followed by a third word and four answer choices. Of the four choices, you must identify the one that would best complete the second set so that it expresses the same relationship as the first set.

Black body : Absorption :: Sun : **?**

- Emission
- Reflection
- Absorption
- Refraction

Ans:Emission

Cocubes Preassess 2018-2019: Domain Computer Science

Section: C, C++ and OOPs

Q1.Break Statement is used to exit :

- from the innermost loop only.
- from all the loops & switches.
- only from the innermost switch.
- from the innermost loop or switch.

Ans: from the innermost loop or switch.

Q2.Consider the following for Loop :

```
for(putchar(‘ c ‘ ) ; putchar( 0 ) ; putchar( ‘ d ‘ ))
putchar(‘ e ‘);
```

How many times the above for loop will execute?

- 0 times
- 1 times
- infinite times
- Will not execute due to syntax error

Ans: 0 times

Q3.What would be the output of the below code?

```
#include <iostream>
using namespace std;
#define VALUE 10
int main()
{
int RESULT;
RESULT = ++VALUE;
cout << RESULT;
return 0;
}
```

- 10
- 11
- compile time error
- run time error

Ans :Compile time error

because “# define value 10′ can’t be change in hole program and value always contain 10 and it is also not increment and decrements .

Q4.What would be the output of the following code?

```
#include <stdio.h>
int main()
{
int x = 4, y, z;
y = --x;
z = x--;
printf("%d%d%d", x, y, z);
return 0;
}
```

- 233
- 223

- 323
- 322

Ans 233

y=3 , then x=3; z=3 then x=2; so 233

Cocubes preassess 2018 Questions – Computer Fundamentals

Q5.What is the difference between const char *p and char * const p ?

- const char *p – This declares ‘p’ to be a constant pointer to a char. (Char p is modifiable but the pointer isn’t)
  char * const p – Pointer to a Constant char (‘p’ isn’t modifiable but the pointer is)
- const char *p – Pointer to a Constant char (‘p’ isn’t modifiable but the pointer is)
  char * const p – This declares ‘p’ to be a constant pointer to an char. (Char p is modifiable but the pointer isn’t)
- const char *p – Constant char Pointer (‘p’ and pointer both are modifiable)
  char * const p – This declares ‘p’ to be a pointer to an constant char. (Char p is modifiable but the pointer isn’t)
- Since const char and char const is the same, there is no difference.

Ans: const char *p – Pointer to a Constant char (‘p’ isn’t modifiable but the pointer is)
char * const p – This declares ‘p’ to be a constant pointer to an char. (Char p is modifiable but the pointer isn’t)

Q6.What would be the output of the below code?

```
#include <iostream>
using namespace std;
class Sample {
static int count;
int id;
public:
Sample() {
count++;
id = count;
cout << "Constructing object number " << id << endl;
if(id == 3)
throw 3;
}
~Sample() { cout << "Destructing object number " << id << endl; }
};
```

```
int Sample::count = 0;
int main() {
try {
Sample array[3];
} catch(int i) {
cout << “Caught ” << i << endl;
}
}
```

- Constructing object number 1
  Constructing object number 2
  Constructing object number 3
  Destructing object number 2
  Destructing object number 1
  Caught 3
- Constructing object number 1
  Constructing object number 2
  Constructing object number 3
  Destructing object number 1
  Destructing object number 2
  Caught 3
- Constructing object number 1
  Constructing object number 2
  Constructing object number 3
  Destructing object number 1
  Destructing object number 2
  Destructing object number 3
  Caught 4
- Constructing object number 1
  Constructing object number 2
  Constructing object number 3
  Destructing object number 3
  Destructing object number 2
  Destructing object number 1
  Caught 4

Ans: Constructing object number 1
Constructing object number 2
Constructing object number 3
Destructing object number 2
Destructing object number 1
Caught 3

Section: Computer Architecture

Q7.The register which contains the data to be written into or read out of the addressed location is called :

- Index register
- Memory address register
- Memory Data register
- Program Counter

Ans: Memory Data Register

Q8.Using overlapped(Parallel) access, which of the following is the effective average access time for a two-level memory, if cache memory access time is 160ns and memory access time is 600 ns and the hit ratio for cache memory is h = 0.9?
[Assume every time we go to main memory we'll get the data we want.]

- 204ns
- 226ns
- 216ns
- 206ns

Ans:204ns

(160*0.9)+(600*0.1)

Section: Data Structures

Q9.Which of the following sorting algorithms does not have a worst case time complexity of $O(n^2)$?

- Insertion sort
- merge sort
- quick sort
- bubble sort

Ans: Merge sort

Q10.Which of the following statement is false about tree?

- Every tree is a bipartite graph
- A tree contains a cycle
- A tree with n nodes contains n-1 edges
- A tree is a connected graph

Ans:A tree contains a cycle

Q11.For a binary search tree if the pre-order traversal is 1,2,3,5,8,9,6,10,4,7 and the in-order traversal is 2,1,8,5,9,3,10,6,7,4 then which of the following is the post-order traversal of the given tree?

- 2,8,9,5,10,6,3,4,7,1
- 2,8,9,5,10,6,3,7,4,1
- 2,8,9,5,10,3,6,7,4,1
- 2,8,9,5,1,10,6,3,7,4

Ans 2,8,9,5,10,6,3,7,4,1

Q12.Using bubble sort, the number of swapping needed to sort numbers 7,21,6,8,30,18,4,12 in ascending order is ?

- 12
- 16
- 13
- 14

Ans: 14

Q13.Using the merge-sort algorithm, a list of n string, each of length n, is sorted into lexicographic order then what would be the worst case running time of this computation?

- $O(n^2)$
- O(n log n)
- $O(n^2 + \log n)$
- $O(n^2 \log n)$

Ans: $O(n^2 \log n)$

Cocubes preassess 2018 Questions – English

Q14.An undirected graph G_1 has m nodes and its adjacency matrix is given by an m × m square matrix whose
(i) Diagonal elements are 0's and
(ii) Non-diagonal elements are 1's.

Which one of the following is TRUE?

- Graph G_1 has no minimum spanning tree (MST)
- Graph G_1 has a unique MST of cost m-1
- Graph G_1 has multiple distinct MSTs, each of cost m-1

- Graph G_1 has multiple spanning trees of different costs

Ans: Graph G_1 has multiple distinct MSTs, each of cost m-1

Section: DBMS Concepts

Q15._____do not preserve non matched tuples.

- Inner join
- Natural join
- Left outer join
- Right outer join

Ans. Inner Join

Q16.CEO's salary details are hidden from the employee. This is called:

- Conceptual level data hiding
- Physical level data hiding
- External level data hiding
- None of the mentioned options

Ans: External level data hiding

Q17.Let R = (A, B, C, D, E, F) be a relation schema with the following dependencies:
C->F, E->A, EC->D, A->B
Which of the following is a key for R?

- CD
- CE
- EC
- AC

Ans: AC

Q18.Consider a relation scheme R_1 = (P, Q, R, S, T, U) on which the following functional dependencies hold: {P->Q, QR-> S, T->R, S->P}. What are the candidate keys of R?

- PT, QT
- PT, QT, ST
- PTU, QTU, QRU
- PTU, QTU, STU

Ans: PTU, QTU, STU

Cocubes preassess 2018 Questions – Computer Fundamentals

Q19. Consider the following schedules involving two transactions. Which one of the following statements is TRUE?
T_1 : $R_1(A)$; $R_1(B)$; $R_2(A)$; $R_2(B)$; $W_2(B)$; $W_1(A)$;
T_2 : $R_1(A)$; $R_2(A)$; $R_2(B)$; $W_2(B)$; $R_1(B)$; $W_1(A)$;

- Both T_1 and T_2 are conflict serializable.
- T_1 is not conflict serializable and T_2 is conflict serializable.
- T_1 is conflict serializable and T_2 is not conflict serializable.
- Both T_1 and T_2 are not conflict serializable.

Ans:T_1 is not conflict serializable and T_2 is conflict serializable

---

Section: Operating System Concepts

Q20.In which of the following situations page fault occurs?

- When the page is corrupted by system software
- When page is in the main memory
- When page is not present in the main memory
- None of the mentioned options

Ans:When page is not present in the main memory

Section: Networking Concepts

Q21:The hamming distance between 11011011 and 01001101 is:

- 2
- 3
- 4
- 5

ans: 4

Q22.The IP network 192.168.130.0 is using the subnet mask 255.255.255.224. Calculate the number of subnets and the number of hosts in each subnet.

- 6 subnets and 1066 hosts
- 64 subnets and 262142 hosts

- 8 subnets 30 hosts
- 254 subnets and 1022 hosts

Ans: 8 subnets 30 hosts

Q23.The maximum data rate of a channel of 3000-Hz bandwidth and SNR of 30 dB is :

- 15000 bps
- 60000bps
- 3000bps
- 30000bps

ans:30000bps

Cocubes preassess 2018 Questions – English

Q24.Given the address 192.168.10.19/28, which of the following is the valid host address on this subnet ?

- 192.168.10.16
- 192.168.10.29
- 192.168.10.31
- 192.168.10.0

ans: 192.168.10.29

Cocubes Preassess 2018-2019:Coding Questions-2

Cocubes Questions – Computer Fundamentals previous year question papers

Question 1.You are given a function,
int* ReverseArray(int* arr, int length);

The function takes an integer array and its length as input. Implement the function to return the array such that the array is reversed i.e. the first element of the array occupies the last position, second element occupies the second last position and so on.
Note:
The re-arrangement is to be done in-place i.e you cannot use another array.

Assumption:
You may assume that the array is of even length.

Example:

Input:
2 4 6 8 20 15 10 5

Output:
5 10 15 20 8 6 4 2

```
int* ReverseArray(int* arr, int length)

{

int t,i;

for(i=0;i<length/2;i++)

{

t=arr[i];

arr[i]=arr[length-i-1];

arr[length-i-1]=t;

}

return arr;

}
```

Question 2.You are given a function,
int FindMaxProduct(int** arr, int n);
The function takes a two-dimensional array having equal number of rows and columns (i.e. a square matrix) and its dimension, ‘n’, as input. Implement the function such that it returns the maximum product that can be formed from four adjacent numbers. Numbers can be adjacent to each other in either of the given directions: up, down, left, right, diagonal or anti-diagonal. Ensure that four adjacent numbers are chosen in such a way that the direction does not change while choosing the numbers. Assume ‘n’ >= 4.

Example:

Input:
5
1 2 3 4 5
6 7 8 9 1
2 3 4 5 6
7 8 9 1 0
9 6 4 2 3

Output:
3024

Explanation:
Here, the numbers 6, 7, 8, 9 in the second row, which are horizontally adjacent form the product 3024 which is the maximum product of any four adjacent numbers in the given array.

```
int FindMaxProduct(int** arr, int n)
{
int i,max=0,prod,j,
for(i=0;i<n;i++)
{
for(j=0;j<n;j++) { if((j-3)>=0) /* left and right */
{
prod=arr[i][j]*arr[i][j-1]*arr[i][j-2]*arr[i][j-3];
if(max<prod) max=prod; } if((i-3)>=0) /* up and down */
{
prod=arr[i][j]*arr[i-1][j]*arr[i-2][j]*arr[i-3][j];
if(max<prod) max=prod; } if((i-3)>=0 && (j-3) >=0) /* Diagonal and anti-diagonal */
{
prod=arr[i][j]*arr[i-1][j-1]*arr[i-2][j -2]*arr[i-3][j-3];
if(max<prod)
max=prod;
}
}
}
return max;
}
```

Question 3. You are given a function,
void FindOnesInBinaryString(char* str);

The function takes a binary string i.e. a string comprising of ‘0’s and ‘1’s as input. Implement the function such that it prints the indices of the first occurrences of three equi-spaced ones, to the standard output (STDOUT). The algorithm to find out the indices of the evenly spaced ones is given as follows:

Find the distance between the first and second ‘1’s and the second and third ‘1’s. If these distances are equal, then their indices are the answer. Else repeat the process for the entire array until three such ‘1’s are found.

Note:
1. Indices start from 0.
2. If no equi-spaced ‘1’s are found, then print ‘-1’

Example:

Input:
011001001000001

Output:
2
5
8

Explanation:
The distance between the ‘1’s at positions 2, 5 and 8 is 2, hence these are the indices of first occurrence of three equi-spaced 1’s.

```
void FindOnesInBinaryString(char* str)

{

Int I,first1=0,second1=0,third1=0,count=0,found=0;

for(i=0;str[i]!=’\0’;i++)

{

If(str[i]==’1’)

{

First1=Second1;

Second1=third1;

Third1=I;

Count++;

}

If(count>=3 && (second1-first1)==(third1 – second1 ))

{

Found=1;

Break;

}
```

}

If(found==1)

Printf(“ %d %d %d”,first1,second1,third1);

Else

Printf(“-1”);

}

Question4. Least Common Multiple (LCM) of three integers x, y, z is the smallest positive integer that is divisible by all three numbers x, y and z.

You are given a function,
int FindLeastCommonMultiple(int x, int y, int z);
The function takes three integers ‘x’, ‘y’, ‘z’ as input. Implement the function to return the least common multiple of the three numbers.

Assumption:
You may assume that LCM of negative numbers is the same as that of their positive equivalents.

Example:

Input:
2
3
4

Output:
12

Explanation:
The smallest number divisible by 2, 3 and 4 is 12, hence it it the output.

```
int FindLeastCommonMultiple(int x, int y, int z)
{
int i,p,l;
 i=1;
  while(1)
     {
     if(i%x==0&&i%y==0&&i%z==0)
     {
     l=i;
     break;
     }
     i++;
     }
     printf("LCM: %d",l);
}
```

Question5. You are given a function,
int OctalToDecimal(int n);
The function takes an integer number, each of whose digits lies between 0 to 7, thus forming an octal number, as input. Implement the function to return its decimal equivalent. The algorithm to convert the octal number to its decimal equivalent is as follows:-
Multiply each digit of the octal number starting with the right most digit and moving leftwards, with increasing powers of 8 starting with 8^0.

Example:

Input:
127

Output:
87

Explanation:
While converting 127 to its decimal equivalent, we start from the right, multiplying
$7 * 8^0 = 7$
$2 * 8^1 = 16$
$1 * 8^2 = 64$

Adding up the results together, we get 7 + 16 + 64 = 87, which is the output.

```
int OctalToDecimal(int n)

{

Int I=0,r,p,s=0;

while(n>0)

{

r=n%l0;

p=pow(8,i);

s=s+p*r;

i++;

n=n/10;

}
```

Return s;

}

https://www.faceprep.in/cocubes-exam/cocubes-coding-questions/