

**Academic Year 2013-2014
Questions & Answers**

1. A soldier loses his way in a thick jungle. At random he walks from his camp but mathematically in an interesting fashion.

First he walks one mile East then half mile to North. Then 1/4 mile to West, then 1/8 mile to South and so on making a loop.

Finally how far he is from his camp and in which direction?

Ans-The soldier is 0.8944 miles away from his camp towards East-North.

It is obvious that he is in East-North direction.

Distance travelled in North and South directions

= $1/2 - 1/8 + 1/32 - 1/128 + 1/512 - 1/2048 +$ and so on... (a geometric series with $r = (-1/4)$)

$$\frac{(1/2) * (1 - (-1/4)^n)}{(1 - (-1/4))}$$

$$= 1 / (2 * (1 - (-1/4)))$$
$$= 2/5$$

Similarly in East and West directions

= $1 - 1/4 + 1/16 - 1/64 + 1/256 -$ and so on... (a geometric series with $r = (-1/4)$)

$$\frac{(1) * (1 - (-1/4)^n)}{(1 - (-1/4))}$$

$$= 1 / ((1 - (-1/4)))$$
$$= 4/5$$

So the soldier is 4/5 miles away towards East and 2/5 miles away towards North. So using right angled triangle, soldier is 0.8944 miles away from his camp.

2. Which of the following is NOT characteristic of an operating system. An operating system:

- w) is a resource manager
- x) is a library of utility programs
- y) defines the "user interface"
- z) shares the hardware among users

Answer

TechQuiz @ IICMR-MCA

IS A LIBRARY OF UTILITY PROGRAMS

3. Who am I?

Take one out and scratch my head, I am now black but once was red.

Ans-Matchstick

4. Raj has a jewel chest containing Rings, Pins and Ear-rings. The chest contains 26 pieces. Raj has 2 1/2 times as many rings as pins, and the number of pairs of earrings is 4 less than the number of rings.

How many earrings does Raj have?

Ans-Assume that there are R rings, P pins and E pair of ear-rings.

It is given that, he has 2 1/2 times as many rings as pins. $R = (5/2) * P$ or

$$P = (2*R)/5$$

And, the number of pairs of earrings is 4 less than the number of rings.

$$E = R - 4 \text{ or } R = E + 4$$

Also, there are total 26 pieces. $R + P +$

$$2*E = 26$$

$$R + (2*R)/5 + 2*E = 26$$

$$5*R + 2*R + 10*E = 130$$

$$7*R + 10*E = 130$$

$$7*(E + 4) + 10*E = 130$$

$$7*E + 28 + 10*E = 130$$

$$17*E =$$

$$102$$

$$E = 6$$

Hence, there are 6 pairs of Ear-rings i.e. total 12 Ear-rings

12 arrings

5. You are transmitting information at 300 baud. This means you are sending approximately:

w) 300 bytes per second

x) 300 kilobytes per minute

y) **300 bits per second**

z) 300 bits per minute

6. Which is correct to say, "The yolk of the egg are white?" or "The yolk of the egg is white?"

Ans-Neither, the yolks are yellow

TechQuiz @ IICMR-MCA

7. Consider a number 235, where last digit is the sum of first two digits i.e. $2 + 3$

= 5. How many such 3-digit numbers are there?

Ans- There are 45 different 3-digit numbers.

The last digit can not be 0.

If the last digit is 1, the only possible number is 101. (Note that 011 is not a 3-digit number)

If the last digit is 2, the possible numbers are 202 and 112.

If the last digit is 3, the possible numbers are 303, 213 and 123.

If the last digit is 4, the possible numbers are 404, 314, 224 and 134.

If the last digit is 5, the possible numbers are 505, 415, 325, 235 and 145.

Note the pattern here - If the last digit is 1, there is only one number. If the last digit is 2, there are two numbers. If the last digit is 3, there are three numbers. If the last digit is 4, there are four numbers. If the last digit is 5, there are five numbers. And so on.....

Thus, total numbers are

$$1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 = 45$$

Altogether then, there are 45 different 3-digit numbers, where last digit is the sum of first two digits.

8. Clara Clatter was born on December 27th, yet her birthday is always in the summer. How is this possible?

Ans- She lives in southern hemisphere

9. Substitute digits for the letters to make the following relation true.

$$\begin{array}{rcccccc} & N & E & V & E & R & \\ & L & E & A & V & E & \\ + & & & & M & E & \\ \hline & A & L & O & N & E & \end{array}$$

Note that the leftmost letter can't be zero in any word. Also, there must be a one- to-

TechQuiz @ IICMR-MCA

11. One of the four people - Mr. Clinton, his wife Monika, their son Mandy and their daughter Cindy - is a singer and another is a dancer. Mr. Clinton is older than his wife and Mady is older than his sister.

- 1. If the singer and the dancer are the same sex, then the dancer is older than the singer.**
- 2. If neither the singer nor the dancer is the parent of the other, then the singer is older than the dancer.**
- 3. If the singer is a man, then the singer and the dancer are the same age.**
- 4. If the singer and the dancer are of opposite sex then the man is older than the woman.**
- 5. If the dancer is a woman, then the dancer is older than the singer. Whose occupation do you know? And what is his/her occupation?**

Ans-1.Cindy is the Singer. Mr. Clinton or Monika is the Dancer.

From (1) and (3), the singer and the dancer, both can not be a man. From (3) and (4), if the singer is a man, then the dancer must be a man. Hence, the singer must be a woman.

CASE I : Singer is a woman and Dancer is also a woman Then, the dancer is Monika and the singer is Cindy.

CASE II : Singer is a woman and Dancer is also a man Then, the dancer is Mr. Clinton and the singer is Cindy.

In both the cases, we know that Cindy is the Singer. And either Mr. Clinton or Monika is the Dancer.

12. What is the four-digit number in which the first digit is $\frac{1}{3}$ of the second, the third is the sum of the first and second, and the last is three times the second?

Ans- The 4 digit number is 1349.

It is given that the first digit is $\frac{1}{3}$ of the second. There are 3 such possibilities.

- 1 and 3
- 2 and 6
- 3 and 9

Now, the third digit is the sum of the first and second digits.

- $1 + 3 = 4$
- $2 + 6 = 8$
- $3 + 9 = 12$

TechQuiz @ IICMR-MCA

It is clear that option 3 is not possible. So we are left with only two options. Also, the last digit is three times the second, which rules out the second option. Hence, the answer is 1349.

13. Can link and Association applied interchangeably?

Ans- No, You cannot apply the link and Association interchangeably. Since link is used represent the relationship between the two objects.

But Association is used represent the relationship between the two classes. link :: student:Abhilash course:MCA

Association:: student course

14. Puzzle

ACROSS

1. The title of this book is *Easy English Crossword*_____.
7. Monkey, chimpanzee, or gorilla
8. Frozen water
9. A male sheep
11. Love, hate, sadness, or anger
14. Road (abbreviation)
15. Tennessee (abbreviation)

DOWN

1. You write on this.
2. Opposite of *down*
3. Nothing; three, two, one, ____
4. The speed_____is 55 miles per hour.
5. Initials for Elizabeth Claire
6. Past participle of *see*
10. Preposition: He lives____134 Main Street.
12. Medical Doctor (abbreviation)
13. Preposition: Dinner is___the table.

1	2	3		4	5	6
7				8		
		9	10			
11	12				13	
14				15		

Ans-

	N	T	E		D	R
N	O	I	T	O	M	E
E		M	A	R		P
E	C	I		E	P	A
S	E	L	Z	Z	U	P

15.Silu and Meenu were walking on the road.

Silu said, "I weigh 51 Kgs. How much do you weigh?"

Meenu replied that she wouldn't reveal her weight directly as she is overweight. But she said, "I weigh 29 Kgs plus half of my weight."

How much does Meenu weigh?

Ans- Meenu weighs 58 Kgs.

It is given that Meenu weighs 29 Kgs plus half of her own weight. It means that 29 Kgs is the other half. So she weighs 58 Kgs.

Solving mathematically, let's assume that her weight is X Kgs. $X = 29 + X/2$

$$2 * X = 58 + X$$

$$X = 58 \text{ Kgs}$$

16.What do you mean by nice value in operating systems?

Ans- Nice value is the value that controls {increments or decrements} the priority of the process.

This value that is returned by the nice () system call. The equation for using nice value is:

$$\text{Priority} = (\text{"recent CPU usage"}/\text{constant}) + (\text{base- priority}) + (\text{nice value})$$

Only the administrator can supply the nice value. The nice () system call works for the running process only.

17.Gavaskar's average in his first 50 innings was 50. After the 51st innings, his average was 51. How many runs did he score in his 51st innings. (supposing that he lost his wicket in his 51st innings)

Ans-101

TechQuiz @ IICMR-MCA

Explanation : Total score after 50 innings = $50 \times 50 = 2500$

Total score after 51 innings = $51 \times 51 = 2601$

So, runs made in the 51st innings = $2601 - 2500 = 101$

If he had not lost his wicket in his 51st innings, he would have scored an unbeaten 50 in his 51st innings.

18. Which comet chasing spacecraft woke after three years of hibernation ?

Ans-Rosetta

19. A man has Ten Horses and nine stables as shown

here.

The man wants to fit Ten Horses into nine stables. How can he fit Ten horses into nine stables?

Ans- The answer is simple. It says the man wants to fit "Ten Horses" into nine stables. There are nine letters in the phrase "Ten Horses". So you can put one letter each in all nine stables.

[T] [E] [N] [H] [O] [R] [S] [E] [S]

20. What will be the output of the following query?

```
SELECT REPLACE(TRANSLATE(LTRIM(RTRIM('!! ATHEN !!','!')), '!'), 'AN',
'**), '*' , 'TROUBLE') FROM DUAL;
```

ans-TROUBLETHETROUBLE

21. Puzzle

ACROSS

1. People who go to school
7. Verb: I ___ *thinking*.
9. A walking stick
10. Either this ___ that
11. Girl's name, short for *Susan*
12. Past form of *hide*
13. To join together
14. Made from vegetable oil; margarine
16. You and I
17. To place something somewhere
18. Registered nurse (abbreviation)

DOWN

1. Place to learn
2. A dog can wag its .
3. Opposite of *over*
4. Delaware (abbreviation)
5. Opposite of *yes*
6. Real; factual; honest
7. Season in September; fall
8. Is introduced to a new person
11. Drink slowly
15. Opposite of 3 DOWN
16. She is ___ a new dress today.

TechQuiz @ IICMR-MCA

- | | |
|--|---|
| <p>20. Woman: Miss, Mrs., or ____</p> <p>21. Louisiana (abbreviation)</p> <p>23. Wish or hope for; desire</p> <p>25. First Monday in September (two words)</p> <p>29. Police officer (slang)</p> <p>30. Rhode Island (abbreviation)</p> <p>31. Give information</p> <p>32. Number: ____, two, three, four</p> <p>33. Parts of legs</p> <p>35. School furniture</p> <p>36. Cars need ____.</p> <p>37. Pronoun for a man</p> | <p>19. United _____ of America</p> <p>22. Not with someone; by oneself</p> <p>23. People eat, sleep, ____, and play.</p> <p>24. North Dakota (abbreviation)</p> <p>26. Monkeys</p> <p>27. Affirmative answer; opposite of <i>no</i></p> <p>28. Sticky liquid; it holds things together</p> <p>29. A type of fish</p> <p>34. Each (abbreviation)</p> |
|--|---|

ANS-

S	T	U	D	E	N	T	S		A	M
C	A	N	E		O	R		S	U	E
H	I	D				U	N	I	T	E
O	L	E	O		W	E		P	U	T
O		R	N		E		S		M	S
L	A			W	A	N	T		N	
	L	A	B	O	R	D	A	Y		G
C	O	P		R	I		T	E	L	L
O	N	E		K	N	E	E	S		U
D	E	S	K		G	A	S		H	E