MindFul Internal Test – 1 (MIT)

Instructions:

- For the Aptitude section, solve the problems on paper and write down the options along with the answers.
- For the Coding Problem Statement, please outline the code logic on paper and implement it in the IDE.
- Kindly write your Name, Department, and College at the top of the sheet.
- Total Duration: 2 hours
- Any malpractice will result in immediate failure of the test with a black mark.
- The question paper below contains an optional MCQ related to MERN Stack. It is included to analyze students' knowledge. If you have any prior knowledge, you can attempt it, but no marks will be allocated for it.

Aptitude (15 x 1 = 15marks)

1) One morning Udai and Vishal were talking to each other face to face at a crossing. If Vishal's shadow was exactly to the left of Udai, which direction was Udai facing?
    a. East
    b. West
    c. North
    d. South

2) A man walks 5 km toward south and then turns to the right. After walking 3 km he turns to the left and walks 5 km. Now in which direction is he from the starting place?
    a. West
    b. South
    c. North-East
    d. South-West

3) Rahul put his timepiece on the table in such a way that at 6 P.M. hour hand points to North. In which direction the minute hand will point at 9.15 P.M. ?
    a. South-East
    b. South
    c. North
    d. West

4) A boy rode his bicycle Northward, then turned left and rode 1 km and again turned left and rode 2 km. He found himself 1 km west of his starting point. How far did he ride northward initially?
    a. 1km
    b. 2km
    c. 3km
    d. 5km

5) K is 40 m South-West of L. If M is 40 m South-East of L, then M is in which direction of K?
    a. East
    b. West
    c. North – East
    d. South

Each of the following questions is based on the following information:
Dev, Kumar, Nilesh, Ankur and Pintu are standing facing to the North in a playground such as given below:
Kumar is at 40 m to the right of Ankur.
Dev is are 60 m in the south of Kumar.
Nilesh is at a distance of 25 m in the west of Ankur.
Pintu is at a distance of 90 m in the North of Dev.

6) If a boy starting from Nilesh, met to Ankur and then to Kumar and after this he to Dev and then to Pintu and whole the time he walked in a straight line, then how much total distance did he cover?
    a. 215m
    b. 155m
    c. 245m
    d. 185m

Each of the following questions is based on the following information:

8-trees → mango, guava, papaya, pomegranate, lemon, banana, raspberry and apple are in two rows 4 in each facing North and South.

Lemon is between mango and apple but just opposite to guava.

Banana is at one end of a line and is just next in the right of guava or either banana tree is just after guava tree.

Raspberry tree which at one end of a line, is just diagonally opposite to mango tree.

7) Which tree is just opposite to banana tree?Papaya
    a. Pomegranate
    b. Mango
    c. Papaya
    d. Data is inadequate

8) A, P, R, X, S and Z are sitting in a row. S and Z are in the centre. A and P are at the ends. R is sitting to the left of A. Who is to the right of P ?
    a. A
    b. X
    c. S
    d. Z

9) A, B, C, D and E are sitting on a bench. A is sitting next to B, C is sitting next to D, D is not sitting with E who is on the left end of the bench. C is on the second position from the right. A is to the right of B and E. A and C are sitting together. In which position A is sitting ?
    a. Between B and D
    b. Between B and C
    c. Between E and D
    d. Between C and E

Each of the following questions is based on the following information:

P, Q, R, S, T, U, V and W are sitting round the circle and are facing the centre:

P is second to the right of T who is the neighbour of R and V.

S is not the neighbour of P.

V is the neighbour of U.

Q is not between S and W. W is not between U and S.

10) Which two of the following are not neighbours ?

a. RV
b. UV
c. RP
d. QW

11) Which one is immediate right to the V ?

a. P
b. U
c. R
d. T

Each of the following questions is based on the following information:

In an Exhibition seven cars of different companies - Cadillac, Ambassador, Fiat, Maruti, Mercedes, Bedford and Fargo are standing facing to east in the following order :

Cadillac is next to right of Fargo.

Fargo is fourth to the right of Fiat.

Maruti car is between Ambassador and Bedford.

Fiat which is third to the left of Ambassador, is at one end.

12) Which of the cars are on both the sides of cadillac car ?

a. Ambassador and Maruti
b. Maruti and Fiat
c. Fargo and Mercedes
d. Ambassador and Fargo

13) Which one of the following statements is correct ?

a. Fargo car is in between Ambassador and Fiat.
b. Cadillac is next left to Mercedes car.
c. Fargo is next right of Cadillac.
d. Maruti is fourth right of Mercedes.

Each of the following questions is based on the following information:

Six friends P, Q, R, S, T and U are sitting around the hexagonal table each at one corner and are facing the centre of the hexagonal. P is second to the left of U. Q is neighbour of R and S. T is second to the left of S.

14) Which one is sitting opposite to P ?
   a. R
   b. Q
   c. T
   d. S

15) Which one is sitting opposite to T ?
   a. R
   b. Q
   c. Cannot be determined
   d. S

MERN Stack Questions:(optional – no marks)

1. What is the difference between var, let, and const in JavaScript?

- a) There's no difference, they all do the same thing.
- b) var is globally scoped, let is block-scoped, and const is constant.
- c) let is for loops only, const is for arrays only.
- d) var is for older browsers, let and const are for modern browsers.

2. How do you select an element by its ID in JavaScript?

- a) getElementByName("id");
- b) getElementByClass("id");
- c) getDocumentById("id");
- d) getElementById("id");

3. What is the output of the following code?

```
console.log(typeof null);
```

- a) number
- b) string
- c) boolean
- d) object

4. What is an event listener in JavaScript?

- a) A function that is executed when a specific event occurs
- b) A way to style HTML elements.
- c) A loop that iterates over an array.
- d) A type of data structure in JavaScript.

5. What is the primary concept behind React JS?

- a) It's a framework for building server-side rendered web applications.
- b) It's a library for creating single-page applications (SPAs) with a component-based architecture.
- c) It's a tool for managing state in complex JavaScript applications.
- d) It's a library for building web APIs.

6. What is the purpose of JSX syntax in React?

- a) It's a preprocessor that simplifies writing JavaScript code.
- b) It's a way to define the structure and styling of UI components.
- c) It's a syntax for managing asynchronous operations in React.
- d) It's a library for making HTTP requests.

7. How does React handle updates to a component's state?

- a) Updates are directly manipulated through DOM manipulation methods.

- b) React uses a virtual DOM to efficiently calculate the minimal changes needed in the real DOM.

- c) Updates require full re-rendering of the entire component tree.

- d) Updates are handled through browser events only.

8. What is the correct way to create a hyperlink in HTML?

- a) Link Text

- b) <link href="url">Link Text</link>

- c) <href="url">Link Text</href>

- d) <url href="Link Text">

9. What is the semantic tag used to represent a heading in HTML?

- a)

- b)

- c) <h1> to <h6>

- d) <p>

10. What is the correct syntax to select all elements with the class name "myClass"?

- a) .myClass

- b) #myClass

- c) myClass

- d) <style>.myClass {...}</style>

Coding Problem Statements (5 x 7 = 35 marks)

1) **Input a string through the console and print the number of vowels and consonants present in the given String**

   Sample Input : "Hello"

   Sampe Output: Vowels: 2, Consonants: 3

   Explanation: The above string contains 2 vowels (e, o) and 3 consonants (h, l, l).

2) **Given Two points (x1,y1), (x2,y2) return the distance between those points**
   (Formula :- Distance = (((x2 – x1)^2 + (y2 – y1)^2)^1/2)

   Sample Input: x1: 1
   x2: 1
   y1: 1
   y2: 5

   Sample Output: 4.0
   Explanation: ((1-1)^2 + (5 – 1)^2)^1/2 → (0 + 16)^1/2 → 4.0

3) **Input number n and corresponding n integers through the console and output the sum of all those integers.**

   Sample Input: n :5

   1 2 3 4 5

   Sample Output: 3.0

   Explanation: 1+2+3+4+5 → 15 / 5 → 3.0

4) **Write the program to print the Zero – One triangle Patttern for given n number of lines**

Sample Input: n: 4

Sample Output:

```
1
0 1
1 0 1
0 1 0 1
```

5) **Input a String through the console and print the reverse of that string using only single for loop.**

Sample Input: "MIT"
Sample Output: "TIM"
Explanation: The Reverse of the given string MIT is TIM.