Nirdesh Tech Fest 2024

Yukti Kala Prelims Round

Annual Tech Fest of RKMVCC

Organised by Department of Computer Science, RKMVCC

Tick ✓ the correct answer in given circle. Each question carries 3 marks. There is negative marking of 1 for every wrong answer. No question has multiple correct answer.

1. The digit in the unit position of the integer 1! + 2! + 3! + 4! + ... 99! + 100! is
   ◯ a. 1 ◯ b. 2 ◯ c. 3 ◯ d. 0

2. Alice and Bob speaks truth in 60% and 70% cases respectively. Find the probability that they contradict each other in a statement.
   ◯ a. 0.13 ◯ b. 0.46 ◯ c. 0.7 ◯ d. 0.48

3. Consider the following pseudo code:

```
function(n){
 final = 0
 i = 1
 while n > 0:{
  remain = n % 2
  n = n / 2
  final = final + (remain * 10)
 i = i * 10
 }
 return final
}
```

   What is the value of function(49)??
   ◯ a. 100011 ◯ b. 110010 ◯ c. 101010 ◯ d. 110001

4. Two sets A and B contain a and b elements respectively. If power set of A contains 16 more elements than that of B, value of a and b are
   ◯ a. 5, 4 ◯ b. 3, 2 ◯ c. 7, 6 ◯ d. None of the above

5. Let A and B be two 3x3 matrices such that $(A+B)^2 = A^2 + B^2$. Then which of the following is true.
   ◯ a. A and B are zero matrices
   ◯ b. $(A-B)^2 = A^2 + B^2$
   ◯ c. $(A-B)^2 = A^2 + B^2$
   ◯ d. AB is the zero matrix

6. Q ◯ a. ◯ b. ◯ c. ◯ d.

7. Q ◯ a. ◯ b. ◯ c. ◯ d.