**Chapter 02 – Computer Science (Class 10)**

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**Multiple Choice Question & Answers**

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**Question 1: Identify the activity that is based on personal preferences rather than algorithmic logic.**

Options:
A. Sorting numbers in a list
B. Deciding what to eat for dinner
C. Determining if a number is a prime number
D. Calculating the square root of a number

✅ Correct Answer: B – Deciding what to eat for dinner

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**Question 2: Counting Principle Problems could easily be understood by the use of:**

Options:
A. Graph representation
B. Tree representation
C. Clock representation
D. Map representation

✅ Correct Answer: B – Tree representation

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**Question 3: In how many ways can you choose 2 out of 5 different books to take on a trip?** (Order does not matter)

Options:
A. 10
B. 20
C. 15
D. 5

✅ Correct Answer: A – 10

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**Question 4: A committee of 3 members is to be selected from a group of 8 people. How many different committees can be formed?**

Options:
A. 56
B. 84
C. 28
D. 120

✅ Correct Answer: A – 56

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**Question 5: You have 5 different shirts and 4 different pants. How many different outfits can you make by choosing one shirt and one pair of pants?**

Options:
A. 9
B. 20
C. 15
D. 10

✅Correct Answer: B – 20

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**Question 6: In how many ways can you select 3 different fruits from a basket of 7 different fruits? (Order does not matter)**

Options:
A. 35
B. 21
C. 56
D. 84

✅Correct Answer: A. 35
Explanation: $\binom{7}{3} = \frac{7 \times 6 \times 5}{3 \times 2 \times 1} = 35$

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**Question 7: The Pigeonhole Principle states that if more items are placed into containers than the number of containers, then:**

Options:
A. Some containers must be empty
B. At least one container must hold more than one item
C. All containers will be full
D. Each item will be placed in a different container

✅Correct Answer: B. At least one container must hold more than one item

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**8. In a set of 50 students, 30 have completed a math project, 25 have completed a science project, and 15 have completed both. How many students have completed at least one project?**

Options:
A. 35
B. 40
C. 45
D. 50

✅Answer: B - 40
Explanation:
Use the formula for union of two sets:
At least one=Math+Sience−Both=30+25−15=40

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**9. Which property of an algorithm ensures that it produces at least one output after the calculations?**

**Options:**

A. Input
B. Output
C. Definiteness
D. Finiteness

✅Answer: B Output

Explanation:

The Output property guarantees that an algorithm must generate at least one result.

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**10. Which property ensures that an algorithm will eventually end after a finite number of steps?**

✅Answer: B Finiteness

Explanation:

Finiteness ensures that the algorithm will not run forever—it will stop after a certain number of steps.

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The End

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