

# National Testing Agency

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## Data Science Artificial Intelligence Cyber Security And Computer Science

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|---------------------------------|-----------|
| <b>Group Number :</b>           | 1         |
| <b>Group Id :</b>               | 611987320 |
| <b>Group Maximum Duration :</b> | 0         |
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## Data Science Artificial Intelligence Cyber Security And Computer Science

|                                              |           |
|----------------------------------------------|-----------|
| <b>Section Id :</b>                          | 611987440 |
| <b>Section Number :</b>                      | 1         |
| <b>Section type :</b>                        | Online    |
| <b>Mandatory or Optional :</b>               | Mandatory |
| <b>Number of Questions :</b>                 | 75        |
| <b>Number of Questions to be attempted :</b> | 75        |
| <b>Section Marks :</b>                       | 300       |
| <b>Maximum Instruction Time :</b>            | 0         |
| <b>Sub-Section Number :</b>                  | 1         |
| <b>Sub-Section Id :</b>                      | 611987948 |
| <b>Question Shuffling Allowed :</b>          | Yes       |

**Question Number : 1 Question Id : 61198733309 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following is not performed by Data link layer?

1. Framing
2. Physical addressing
3. Error Control
4. Routing

**Options :**

- 611987131201. 1
- 611987131202. 2
- 611987131203. 3
- 611987131204. 4

**Question Number : 2 Question Id : 61198733310 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following is not a correct statement in C?

1. void func();
2. for (i = 0, i ≤ 10; i++);
3. If (2 == 2);
4. double int x;

**Options :**

- 611987131205. 1
- 611987131206. 2
- 611987131207. 3
- 611987131208. 4

**Question Number : 3 Question Id : 61198733311 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following is not related to tree structure?

1. Pre order
2. Post order
3. in order
4. middle order

**Options :**

- 611987131209. 1
- 611987131210. 2
- 611987131211. 3
- 611987131212. 4

**Question Number : 4 Question Id : 61198733312 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following is not a part of data structure?

- 1. Linked list
- 2. Queue
- 3. Program
- 4. Tree

**Options :**

- 611987131213. 1
- 611987131214. 2
- 611987131215. 3
- 611987131216. 4

**Question Number : 5 Question Id : 61198733313 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $f(x) = 2x + 3$  and  $g(x) = x^2$ , then  $(gof)(x)$  and  $(fog)(x)$  are

- 1.  $(gof)(x) = 4x^2 + 12x + 9$ ,  $(fog)(x) = 2x^2 + 3$ ;
- 2.  $(gof)(x) = 4x^2 + 12x + 9$ ,  $(fog)(x) = 2x^2 + 6$
- 3.  $(gof)(x) = 2x^2 + 3$ ,  $(fog)(x) = 4x^2 + 12x + 9$
- 4.  $(gof)(x) = 2x^2 + 8$ ,  $(fog)(x) = (2x + 3)^2$

**Options :**

- 611987131217. 1
- 611987131218. 2
- 611987131219. 3
- 611987131220. 4

**Question Number : 6 Question Id : 61198733314 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Let  $G$  be a finite group of order 15. Which of the following is true?

1.  $G$  must be cyclic
2.  $G$  need not be cyclic
3. Every element of  $G$  has order not dividing 15
4.  $G$  has a subgroup of order 6

**Options :**

- 611987131221. 1
- 611987131222. 2
- 611987131223. 3
- 611987131224. 4

**Question Number : 7 Question Id : 61198733315 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Let  $A = \{1, 2, 3, 4\}$  and  $B = \{a, b, c\}$ , then total number of onto functions from  $A \rightarrow B$  is :

1. 32
2. 24
3. 36
4. 48

**Options :**

- 611987131225. 1
- 611987131226. 2
- 611987131227. 3
- 611987131228. 4

**Question Number : 8 Question Id : 61198733316 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The solution of the recursive function:

$$T(n) = 2T\left(\frac{n}{2}\right) + 1$$

1.  $O(\log n)$
2.  $O(n \log n)$
3.  $O(n^2)$
4.  $O(n)$

**Options :**

- 611987131229. 1
- 611987131230. 2
- 611987131231. 3
- 611987131232. 4

**Question Number : 9 Question Id : 61198733317 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following collision resolution technique can cause the primary clustering?

- 1. Quadratic probing
- 2. Chaining
- 3. Double hashing
- 4. Linear probing

**Options :**

- 611987131233. 1
- 611987131234. 2
- 611987131235. 3
- 611987131236. 4

**Question Number : 10 Question Id : 61198733318 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following sorting algorithm is not stable?

- 1. Merge Sort
- 2. Insertion Sort
- 3. Heap Sort
- 4. Bubble Sort

**Options :**

- 611987131237. 1
- 611987131238. 2
- 611987131239. 3
- 611987131240. 4

**Question Number : 11 Question Id : 61198733319 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If stack pointer (SP) =2500H before PUSH B, then after its execution, stack pointer has

1. SP = 2502 H
2. SP = 24FE H
3. SP = 2500 H
4. SP = 24FF H

**Options :**

611987131241. 1  
611987131242. 2  
611987131243. 3  
611987131244. 4

**Question Number : 12 Question Id : 61198733320 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If 8085 uses a 6 MHz crystal, the internal clock frequency is:

1. 3 MHz
2. 6 MHz
3. 12 MHz
4. 9 MHz

**Options :**

611987131245. 1  
611987131246. 2  
611987131247. 3  
611987131248. 4

**Question Number : 13 Question Id : 61198733321 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following best describes the main purpose of message authentication code(MAC) in a symmetric key system?

1. To encrypt the message for confidentiality
2. To verify both integrity and authenticity of a message
3. To generate the session keys dynamically
4. To provide digital signature using asymmetric keys

**Options :**

611987131249. 1

611987131250. 2

611987131251. 3

611987131252. 4

**Question Number : 14 Question Id : 61198733322 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following statement about the playfair cipher is false?

1. It is a polygraphic substitution cipher.
2. It encrypts pair of letters at a time.
3. It is a transposition cipher.
4. It eliminates frequency analysis of single letters.

**Options :**

611987131253. 1

611987131254. 2

611987131255. 3

611987131256. 4

**Question Number : 15 Question Id : 61198733323 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following are correct pairs of protocols at application layer and transport layer?

1. DNS-TCP, FTP-UDP
2. HTTP-UDP, SMTP-UDP
3. FTP-TCP, DNS-UDP/TCP
4. POP-UDP, HTTP-TCP

**Options :**

611987131257. 1

611987131258. 2

611987131259. 3

611987131260. 4

**Question Number : 16 Question Id : 61198733324 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In TCP congestion control, when packet loss is detected by timeout, the sender typically:

1. Doubles the congestion window size
2. Resets the congestion window to one segment
3. Halves the congestion window
4. Retransmits all unacknowledged packets immediately

**Options :**

- 611987131261. 1
- 611987131262. 2
- 611987131263. 3
- 611987131264. 4

**Question Number : 17 Question Id : 61198733325 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following is not a physical topology in computer networks?

1. Mesh
2. Star
3. Triangle
4. Ring

**Options :**

- 611987131265. 1
- 611987131266. 2
- 611987131267. 3
- 611987131268. 4

**Question Number : 18 Question Id : 61198733326 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A memory has a 32 bit address bus and 16 bit data bus. What is its maximum memory size?

1.  $(2^{32} - 1)$  bytes
2.  $2^{32}$  bytes
3.  $2^{32}$  words
4.  $(2^{32} - 1)$  words

**Options :**

- 611987131269. 1

611987131270. 2

611987131271. 3

611987131272. 4

**Question Number : 19 Question Id : 61198733327 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

An instruction pipeline has 5 stages. If there is a branch instruction every 10<sup>th</sup> instruction and each branch introduces a 2 cycle stall, what is the average CPI (cycle per instruction) (assuming ideal CPI = 1)?

1. 1.1

2. 1.2

3. 1.3

4. 1.5

**Options :**

611987131273. 1

611987131274. 2

611987131275. 3

611987131276. 4

**Question Number : 20 Question Id : 61198733328 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following statement best describes thrashing?

1. Excessive CPU-bound processing causing starvation

2. A high rate of page faults due to over-commitment of memory

3. Process scheduling overhead due to too many threads

4. Deadlock caused by memory fragmentation

**Options :**

611987131277. 1

611987131278. 2

611987131279. 3

611987131280. 4

**Question Number : 21 Question Id : 61198733329 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which statement about I/O scheduling is true?

1. SSTF always minimizes seek time for all requests
2. C-SCAN services requests in both directions
3. SCAN (Elevator algorithm) favours requests in one direction, then reverses.
4. FCFS provides minimum average response time

**Options :**

- 611987131281. 1
- 611987131282. 2
- 611987131283. 3
- 611987131284. 4

**Question Number : 22 Question Id : 61198733330 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following is not a common file extension?

1. .exe
2. .bin
3. .doc
4. .cup

**Options :**

- 611987131285. 1
- 611987131286. 2
- 611987131287. 3
- 611987131288. 4

**Question Number : 23 Question Id : 61198733331 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following circuit can not be used for arithmetic operation?

1. Half adder
2. Full adder
3. Encoder
4. Parallel adder

**Options :**

- 611987131289. 1
- 611987131290. 2

611987131291. 3

611987131292. 4

**Question Number : 24 Question Id : 61198733332 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following Boolean law is applied for  $A+B'C=(A+B')(A+C)$ ?

1. Involution
2. Distributive
3. Absorption
4. De Morgan

**Options :**

611987131293. 1

611987131294. 2

611987131295. 3

611987131296. 4

**Question Number : 25 Question Id : 61198733333 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following does not belong to AI agents terminology?

1. Performance measure of agent
2. Percept
3. Agent function
4. Agent's jump

**Options :**

611987131297. 1

611987131298. 2

611987131299. 3

611987131300. 4

**Question Number : 26 Question Id : 61198733334 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following is used to improve the performance of AI agent?

1. Learning
2. Perceiving
3. Observing
4. Moving

**Options :**

611987131301. 1  
611987131302. 2  
611987131303. 3  
611987131304. 4

**Question Number : 27 Question Id : 61198733335 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Let  $r$  and  $s$  be regular expressions. Which of the following is true?

1.  $r(\epsilon)^* = r^*$
2.  $(r^*s^*)^* = (r+s)^*$
3.  $(r+s)^* = r^* + s^*$
4.  $r^*s^* = r^* + s^*$

**Options :**

611987131305. 1  
611987131306. 2  
611987131307. 3  
611987131308. 4

**Question Number : 28 Question Id : 61198733336 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following statement is not true?

1. Any regular language can be generated by a context free grammar (CFG).
2. Some non-regular languages cannot be accepted by PDA.
3. The intersection of a CFL and regular set is a CFL.
4. All non - regular languages can be generated by CFGs.

**Options :**

611987131309. 1

611987131310. 2

611987131311. 3

611987131312. 4

**Question Number : 29 Question Id : 61198733337 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following statement about the K-means algorithm is false?

1. K-means minimizes within-cluster variance
2. K-means can handle non-convex clusters effectively
3. It requires specifying the number of clusters in advance
4. It can converge to a local minimum depending on initialization

**Options :**

611987131313. 1

611987131314. 2

611987131315. 3

611987131316. 4

**Question Number : 30 Question Id : 61198733338 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following step in the data science workflow is most dependent on domain expertise?

1. Data cleaning
2. Feature selection and engineering
3. Model evaluation
4. Data normalization

**Options :**

611987131317. 1

611987131318. 2

611987131319. 3

611987131320. 4

**Question Number : 31 Question Id : 61198733339 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** Arrays are allocated memory dynamically

**Reason R:** They can be used to allocate multiple memory locations.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 611987131321. 1
- 611987131322. 2
- 611987131323. 3
- 611987131324. 4

**Question Number : 32 Question Id : 61198733340 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** Every Boolean algebra is a distributive lattice.

**Reason R:** In Boolean algebra, both distributive laws hold for the operations of join ( $\vee$ ) and meet ( $\wedge$ ).

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 611987131325. 1
- 611987131326. 2
- 611987131327. 3
- 611987131328. 4

**Question Number : 33 Question Id : 61198733341 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** Strassen's matrix multiplication reduces the number of multiplications compared to the classical method.

**Reason R:** It divides each  $n \times n$  matrix into 4 submatrices and recursively applies 8 multiplication instead of 7.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 611987131329. 1
- 611987131330. 2
- 611987131331. 3
- 611987131332. 4

**Question Number : 34 Question Id : 61198733342 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** In 8085, an instruction may have more than one machine cycle.

**Reason R:** A machine cycle is defined as the total time required to fetch, decode and execute the data.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 611987131333. 1
- 611987131334. 2
- 611987131335. 3
- 611987131336. 4

**Question Number : 35 Question Id : 61198733343 Question Type : MCQ Option Shuffling : No**

**Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** Virtual Private Networks (VPNs) allow secure communication over public networks using encryption.

**Reason R:** VPNs can prevent all possible network attacks without additional security measure.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 611987131337. 1
- 611987131338. 2
- 611987131339. 3
- 611987131340. 4

**Question Number : 36 Question Id : 61198733344 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** In sliding window protocol, the cumulative acknowledgements increase channel efficiency.

**Reason R:** It allow the receiver to acknowledge multiple frames with single ACK.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 611987131341. 1
- 611987131342. 2
- 611987131343. 3
- 611987131344. 4

**Question Number : 37 Question Id : 61198733345 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** Increasing cache size generally reduces miss rate.

**Reason R:** Larger cache can hold more blocks, decreasing the probability of cache misses.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 611987131345. 1
- 611987131346. 2
- 611987131347. 3
- 611987131348. 4

**Question Number : 38 Question Id : 61198733346 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** Deadlock can occur when processes hold resources while waiting for others.

**Reason R:** The circular wait condition is both necessary and sufficient for deadlock.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 611987131349. 1
- 611987131350. 2
- 611987131351. 3
- 611987131352. 4

**Question Number : 39 Question Id : 61198733347 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

**Assertion A:** Master-slave JK flip - flop eliminates the race - around condition

**Reason R:** The output changes only when the clock is low in the slave latch.

In the light of the above statements, choose the **most appropriate** answer from the options given below

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

- 611987131353. 1
- 611987131354. 2
- 611987131355. 3
- 611987131356. 4

**Question Number : 40 Question Id : 61198733348 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider the data types in order of increasing memory size in C.

- A. double
- B. int
- C. char
- D. float

Choose the **correct** answer from the options given below:

1. A, D, C, B
2. C, B, D, A
3. A, D, B, C
4. C, B, A, D

**Options :**

- 611987131357. 1
- 611987131358. 2
- 611987131359. 3

**Question Number : 41 Question Id : 61198733349 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Arrange the following concepts in logical order of abstraction in algebraic structures (from least to more general)

- A. Group
- B. Monoid
- C. Semi group
- D. Ring
- E. Field

Choose the **correct** answer from the options given below:

1. A, B, C, D, E
2. E, D, C, B, A
3. C, B, A, D, E
4. B, A, C, D, E

**Options :**

- 611987131361. 1
- 611987131362. 2
- 611987131363. 3
- 611987131364. 4

**Question Number : 42 Question Id : 61198733350 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider the following techniques based on their time complexities in increasing order:

- A. Insertion sort (best case)
- B. Quick sort (worst case)
- C. Binary search (average case)
- D. Merge sort (average case)

Choose the **correct** answer from the options given below:

1. D, A, B, C
2. C, A, D, B
3. A, C, B, D
4. C, A, B, D

**Options :**

- 611987131365. 1
- 611987131366. 2
- 611987131367. 3
- 611987131368. 4

**Question Number : 43 Question Id : 61198733351 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider the order of states of a process for its execution.

- A. New
- B. Running
- C. Ready
- D. Terminate

Choose the *correct* answer from the options given below:

- 1. C, A, D, B
- 2. B, C, A, D
- 3. A, C, B, D
- 4. C, A, B, D

**Options :**

- 611987131369. 1
- 611987131370. 2
- 611987131371. 3
- 611987131372. 4

**Question Number : 44 Question Id : 61198733352 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider the following in terms of memory size in increasing order:

- A. Secondary storage
- B. Register
- C. Main memory
- D. Cache

Choose the **correct** answer from the options given below:

1. B, C, D, A
2. B, D, C, A
3. A, C, D, B
4. A, D, C, B

**Options :**

- 611987131373. 1
- 611987131374. 2
- 611987131375. 3
- 611987131376. 4

**Question Number : 45 Question Id : 61198733353 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider the Excess-3 codes in increasing values

- A. 0111
- B. 0011
- C. 0101
- D. 0100
- E. 0110

Choose the **correct** answer from the options given below:

1. B, D, C, E, A
2. B, C, D, E, A
3. A, E, C, D, B
4. A, C, E, B, D

**Options :**

- 611987131377. 1
- 611987131378. 2
- 611987131379. 3
- 611987131380. 4

**Question Number : 46 Question Id : 61198733354 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider the steps to be carried out for problem solving by AI agent..

- A. Determine what constitutes the solution
- B. Use the agent to compute an output, which is answer presented to a user or action to be carried out in the environment
- C. Represent the problem in a way an agent can reason about
- D. Interpret the output as a solution to the problem

Choose the **correct** answer from the options given below:

- 1. A, B, C, D
- 2. B, A, C, D
- 3. A, C, B, D
- 4. B, A, D, C

**Options :**

- 611987131381. 1
- 611987131382. 2
- 611987131383. 3
- 611987131384. 4

**Question Number : 47 Question Id : 61198733355 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider the following formal languages in order of generalization.

- A. Recursively enumerable language
- B. Context free language
- C. Regular language
- D. Context sensitive language

Choose the **correct** answer from the options given below:

- 1. C, B, A, D
- 2. A, D, B, C
- 3. C, B, D, A
- 4. A, D, C, B

**Options :**

- 611987131385. 1
- 611987131386. 2

611987131387. 3

611987131388. 4

**Question Number : 48 Question Id : 61198733356 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider the following steps of a machine learning model development cycle to be arranged in correct order:

- A. Model training
- B. Data collection
- C. Data Prepossessing
- D. Model evaluation and validation
- E. Model deployment

Choose the **correct** answer from the options given below:

- 1. B, C, D, A, E
- 2. C, B, A, E, D
- 3. B, C, A, D, E
- 4. C, B, D, E, A

**Options :**

611987131389. 1

611987131390. 2

611987131391. 3

611987131392. 4

**Question Number : 49 Question Id : 61198733357 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider the HLDC frame fields from left to right.

- A. Control
- B. Address
- C. FCS
- D. Upper layer data

Choose the **correct** answer from the options given below:

- 1. B, A, D, C
- 2. D, C, B, A
- 3. D, C, A, B
- 4. B, A, C, D

**Options :**

- 611987131393. 1
- 611987131394. 2
- 611987131395. 3
- 611987131396. 4

**Question Number : 50 Question Id : 61198733358 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider the sequence of operations in 8085.

- A. Perform arithmetic and logic operation
- B. Fetch data
- C. Test condition
- D. If condition satisfied perform next operation

Choose the **correct** answer from the options given below:

- 1. B, A, C, D
- 2. B, A, D, C
- 3. C, D, A, B
- 4. C, D, B, A

**Options :**

- 611987131397. 1
- 611987131398. 2
- 611987131399. 3
- 611987131400. 4

Question Number : 51 Question Id : 61198733359 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider the following cipher methods in order of complexity.

- A. Affine cipher
- B. Caesar cipher
- C. Playfair cipher
- D. Hill cipher

Choose the **correct** answer from the options given below:

- 1. B, A, D, C
- 2. A, D, B, C
- 3. B, A, C, D
- 4. A, D, C, B

**Options :**

- 611987131401. 1
- 611987131402. 2
- 611987131403. 3
- 611987131404. 4

Question Number : 52 Question Id : 61198733360 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider the following statements.

- A. In a single linked list, we can traverse in backward direction
- B. In a queue, both ends are used
- C. In a stack, only one end is used
- D. Arrays are contiguous memory allocation.
- E. Binary trees can have only two children

Choose the **correct** answer from the options given below:

- 1. A, B, C only
- 2. C, D, E only
- 3. D, E, A only
- 4. B, C, D only

**Options :**

- 611987131405. 1
- 611987131406. 2

611987131407. 3

611987131408. 4

**Question Number : 53 Question Id : 61198733361 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider following statements regarding function.

- A. Every injective function has a left inverse
- B. Every surjective function has a right inverse
- C. if  $f : A \rightarrow B$  and  $g : B \rightarrow C$  are bijective, then  $g \circ f$  is bijective
- D. If  $g \circ f$  is injective, then  $f$  must be injective
- E. If  $g \circ f$  is surjective, then  $g$  must be injective

Choose the **correct** answer from the options given below:

- 1. B, C, D, E only
- 2. A, B, C, D only
- 3. B, C, E only
- 4. A, D, E only

**Options :**

611987131409. 1

611987131410. 2

611987131411. 3

611987131412. 4

**Question Number : 54 Question Id : 61198733362 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider following statements:

- A. Quick sort follows divide and conquer approach
- B. Quick sort can not be applicable in virtual environment
- C. The quick sort's time complexity in worst, average and best case is  $O(\log n)$
- D.  $T(n) = 2T\left(\frac{n}{2}\right) + n$  is average case recurrence relation of merge sort
- E. Quick, sort performs worst when list is already sorted.

Choose the **correct** answer from the options given below:

- 1. B, C, D only
- 2. A, D, B only
- 3. A, D, E only
- 4. B, C, E only

**Options :**

- 611987131413. 1
- 611987131414. 2
- 611987131415. 3
- 611987131416. 4

**Question Number : 55 Question Id : 61198733363 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider the following statements about the 8085 microprocessor:

- A. The 8085 has a 16 bit address bus and an 8 bit data bus
- B. The program counter (PC) and stack pointer (SP) are 16 bit registers.
- C. The accumulator is a 16 bit register
- D. The 8085 can directly access 64 kB memory

Choose the **correct** answer from the options given below:

- 1. A, B, D only
- 2. A, C only
- 3. B, C only
- 4. A, C, D only

**Options :**

- 611987131417. 1
- 611987131418. 2
- 611987131419. 3
- 611987131420. 4

**Question Number : 56 Question Id : 61198733364 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider following statements:

- A. The encryption algorithm and decryption algorithm are inverse of each other.
- B. The key space in symmetric encryption must be large enough to resist brute force attacks.
- C. The symmetric cipher model uses two distinct keys for encryption and decryption.
- D. Substitution and transposition are two main types of symmetric ciphers.
- E. The symmetric model is used in AES, DES.

Choose the **correct** answer from the options given below:

- 1. A, C, D only
- 2. A, B, C only
- 3. A, B, D, E only
- 4. B, C, D, E only

**Options :**

- 611987131421. 1
- 611987131422. 2
- 611987131423. 3
- 611987131424. 4

**Question Number : 57 Question Id : 61198733365 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider the following statements about routing and congestion control:

- A. Distance vector routing uses the Bellman- Ford algorithm.
- B. Link state routing requests full topology knowledge at each router.
- C. Congestion control ensures fair and efficient bandwidth sharing.
- D. RIP and OSPF are both distance vector protocols.
- E. TCP congestion control uses additive increase multiplicative decrease.

Choose the **correct** answer from the options given below:

- 1. D, A, C, E only
- 2. A, B, D only
- 3. B, C, D, E only
- 4. A, B, C, E only

**Options :**

611987131425. 1

611987131426. 2

611987131427. 3

611987131428. 4

**Question Number : 58 Question Id : 61198733366 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider the following statements about cache memory.

- A. Increasing associativity reduces conflict misses
- B. Write back policy minimizes main memory traffic
- C. Write - through cache ensures better reliability
- D. Cache hit time decreases with larger cache size

Choose the **correct** answer from the options given below:

- 1. B, C, D only
- 2. A, B only
- 3. A, C, D only
- 4. A, B, C only

**Options :**

611987131429. 1

611987131430. 2

611987131431. 3

611987131432. 4

**Question Number : 59 Question Id : 61198733367 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider following statements about file system

- A. The inode stores file metadata
- B. Contiguous allocation leads to external fragmentation
- C. Linked allocation allows direct access.
- D. FAT and UNIX file systems use different index.
- E. NTFS uses a master file table (MFT)

Choose the **correct** answer from the options given below:

- 1. A, B, C only
- 2. A, B, D, E only
- 3. B, C, D only
- 4. A, C, E only

**Options :**

- 611987131433. 1
- 611987131434. 2
- 611987131435. 3
- 611987131436. 4

**Question Number : 60 Question Id : 61198733368 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider the following statements:

- A. In 2's complement, the range for an 8 bit number is -128 to 127.
- B. In 1's complement, there are three representations for zero.
- C. Overflow occurs when adding 15 and 10 using four bit registers.
- D. In unsigned arithmetic, overflow occurs only on carry generation from MSB.

Choose the **correct** answer from the options given below:

- 1. A, B, D only
- 2. A, B, C only
- 3. A, C, D only
- 4. B, C, D only

**Options :**

- 611987131437. 1
- 611987131438. 2
- 611987131439. 3
- 611987131440. 4

Question Number : 61 Question Id : 61198733369 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider the AI experts and their contributions made in AI

- A. Samuel developed a program that learns game of checker.
- B. Hebb developed a model of artificial neuron.
- C. Rosenblatt gave a proof of perception convergence.
- D. Weizenbaum developed ELIZA chatterbot.
- E. McCarthy developed LISP.

Choose the **correct** answer from the options given below:

- 1. A, B, C, D only
- 2. B, C, D, E only
- 3. C, D, E, A only
- 4. E, A, B only

**Options :**

- 611987131441. 1
- 611987131442. 2
- 611987131443. 3
- 611987131444. 4

Question Number : 62 Question Id : 61198733370 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider following statements about regular expressions and DFA's.

- A. Every regular expression defines a DFA.
- B. Every DFA can be represented by some regular expression.
- C. Conversion from DFA to regular expression is always possible.
- D. Conversion from regular expression to DFA is not always possible.

Choose the **correct** answer from the options given below:

- 1. B, C only
- 2. A, B, C only
- 3. A, D only
- 4. B, C, D only

**Options :**

- 611987131445. 1
- 611987131446. 2

611987131447. 3

611987131448. 4

**Question Number : 63 Question Id : 61198733371 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Consider following statements:

- A. Z-score normalization transforms data to have zero mean and unit variance.
- B. Min-Max scaling does not preserve the original data distribution.
- C. Outlier removal is always recommended before training models.
- D. Smoothing can be done via moving averages or binning.
- E. Missing data imputation can distort variance in the dataset.

Choose the **correct** answer from the options given below:

- 1. A, B, D only
- 2. A, C, E only
- 3. A, D, E only
- 4. B, C, D only

**Options :**

611987131449. 1

611987131450. 2

611987131451. 3

611987131452. 4

**Question Number : 64 Question Id : 61198733372 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Match the **LIST-I** with **LIST-II**

| LIST-I |             | LIST-II |                                |
|--------|-------------|---------|--------------------------------|
| A.     | Recursion   | I.      | reduces number of variables    |
| B.     | Function    | II.     | Allocates memory dynamically   |
| C.     | Array       | III.    | A function calls itself        |
| D.     | Linked list | IV.     | Reduces the repetition of code |

Choose the **correct** answer from the options given below:

1. A-III, B-IV, C-I, D-II
2. A-III, B-IV, C-II, D-I
3. A-IV, B-III, C-I, D-II
4. A-IV, B-III, C-II, D-I

**Options :**

611987131453. 1  
611987131454. 2  
611987131455. 3  
611987131456. 4

**Question Number : 65 Question Id : 61198733373 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Match the **LIST-I** with **LIST-II**

| LIST-I |                        | LIST-II |                                        |
|--------|------------------------|---------|----------------------------------------|
| A.     | Reflexive relation     | I.      | $aRb \Rightarrow bRa$                  |
| B.     | Symmetric relation     | II.     | $aRb \text{ and } bRc \Rightarrow aRc$ |
| C.     | Transitive relation    | III.    | $aRa \forall a \in A$                  |
| D.     | Antisymmetric relation | IV.     | $aRb \text{ and } bRa \Rightarrow a=b$ |

Choose the **correct** answer from the options given below:

1. A-I, B-III, C-II, D-IV
2. A-III, B-I, C-IV, D-II
3. A-III, B-I, C-II, D-IV
4. A-I, B-IV, C-II, D-III

**Options :**

611987131457. 1

611987131458. 2

611987131459. 3

611987131460. 4

**Question Number : 66 Question Id : 61198733374 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Match the **LIST-I** with **LIST-II**

| LIST-I |                          | LIST-II |                                   |
|--------|--------------------------|---------|-----------------------------------|
| A.     | Depth first search       | I.      | Queue                             |
| B.     | Huffman coding Algorithm | II.     | Add smallest edge connecting tree |
| C.     | Prim's algorithm         | III.    | Merge two least frequency symbols |
| D.     | Breadth first search     | IV.     | Stack                             |

Choose the **correct** answer from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-III, B-II, C-I, D-IV
3. A-IV, B-III, C-II, D-I
4. A-III, B-IV, C-I, D-II

**Options :**

611987131461. 1

611987131462. 2

611987131463. 3

611987131464. 4

**Question Number : 67 Question Id : 61198733375 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Match the **LIST-I** with **LIST-II**

Match interrupts with their features of 8085 microprocessor

| LIST-I<br>Interrupts |         | LIST-II<br>Feature |                                |
|----------------------|---------|--------------------|--------------------------------|
| A.                   | TRAP    | I.                 | Non-maskable, highest priority |
| B.                   | RST 7.5 | II.                | Edge - triggered, maskable     |
| C.                   | RST 6.5 | III.               | Level - triggered, maskable    |
| D.                   | INTR    | IV.                | Non-vectored, lowest priority  |

Choose the **correct** answer from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-II, B-III, C-IV, D-I
3. A-II, B-I, C-III, D-IV
4. A-IV, B-II, C-III, D-I

**Options :**

611987131465. 1

611987131466. 2

611987131467. 3

611987131468. 4

**Question Number : 68 Question Id : 61198733376 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Match the **LIST-I** with **LIST-II**

| LIST-I |                 | LIST-II |                                                       |
|--------|-----------------|---------|-------------------------------------------------------|
| A.     | Confidentiality | I.      | Ensure sender and receiver identities are genuine     |
| B.     | Integrity       | II.     | Ensure data is accessible only to authorized users    |
| C.     | Authentication  | III.    | Protect against unauthorized modification             |
| D.     | Availability    | IV.     | Ensure data or services remain accessible when needed |

Choose the **correct** answer from the options given below:

1. A-III, B-II, C-IV, D-I
2. A-II, B-III, C-I, D-IV
3. A-III, B-II, C-I, D-IV
4. A-II, B-III, C-IV, D-I

**Options :**

- 611987131469. 1
- 611987131470. 2
- 611987131471. 3
- 611987131472. 4

**Question Number : 69 Question Id : 61198733377 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Match the **LIST-I** with **LIST-II**

| LIST-I |      | LIST-II |                                                   |
|--------|------|---------|---------------------------------------------------|
| A.     | ICMP | I.      | transfers file between systems                    |
| B.     | SMTP | II.     | Reports network errors and diagnostics            |
| C.     | POP3 | III.    | Retrieves mail from remote server to local device |
| D.     | FTP  | IV.     | Sends mail between servers.                       |

Choose the **correct** answer from the options given below:

- 1. A-IV, B-III, C-I, D-II
- 2. A-IV, B-III, C-II, D-I
- 3. A-II, B-IV, C-I, D-III
- 4. A-II, B-IV, C-III, D-I

**Options :**

- 611987131473. 1
- 611987131474. 2
- 611987131475. 3
- 611987131476. 4

**Question Number : 70 Question Id : 61198733378 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Match the **LIST-I** with **LIST-II**

| LIST-I |                         | LIST-II |                                             |
|--------|-------------------------|---------|---------------------------------------------|
| A.     | Maskable interrupts     | I.      | Can be disabled using control bit (INTR)    |
| B.     | Non-maskable interrupts | II.     | Highest priority, can not be disabled (NMI) |
| C.     | Software interrupts     | III.    | Triggered by instruction (INT)              |
| D.     | Hardware interrupts     | IV.     | Triggered by I/O device or external events  |

Choose the **correct** answer from the options given below:

1. A-I, B-III, C-II, D-IV
2. A-IV, B-III, C-II, D-I
3. A-II, B-I, C-III, D-IV
4. A-I, B-II, C-III, D-IV

**Options :**

611987131477. 1  
611987131478. 2  
611987131479. 3  
611987131480. 4

**Question Number : 71 Question Id : 61198733379 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Match the **LIST-I** with **LIST-II**

| LIST-I |                   | LIST-II |                         |
|--------|-------------------|---------|-------------------------|
| A.     | Process Control   | I.      | Reposition              |
| B.     | File management   | II.     | Logically attach device |
| C.     | Device management | III.    | send/receive message    |
| D.     | Communication     | IV.     | wait for time           |

Choose the **correct** answer from the options given below:

1. A-III, B-IV, C-I, D-II
2. A-IV, B-I, C-III, D-II
3. A-III, B-IV, C-II, D-I
4. A-IV, B-I, C-II, D-III

**Options :**

611987131481. 1

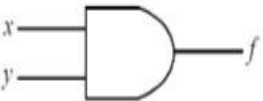
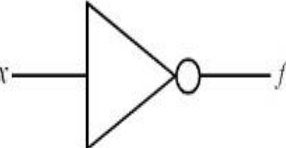
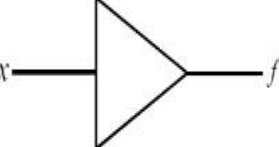
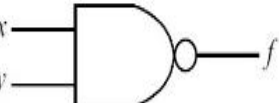
611987131482. 2

611987131483. 3

611987131484. 4

**Question Number : 72 Question Id : 61198733380 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Match the **LIST-I** with **LIST-II**

| LIST-I |                                                                                     | LIST-II |           |
|--------|-------------------------------------------------------------------------------------|---------|-----------|
| A.     |    | I.      | NAND gate |
| B.     |    | II.     | Buffer    |
| C.     |   | III.    | Inverter  |
| D.     |  | IV.     | AND gate  |

Choose the **correct** answer from the options given below:

1. A-II, B-I, C-IV, D-III
2. A-IV, B-III, C-II, D-I
3. A-III, B-IV, C-I, D-II
4. A-I, B-II, C-III, D-IV

**Options :**

611987131485. 1

611987131486. 2

611987131487. 3

611987131488. 4

**Question Number : 73 Question Id : 61198733381 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Match the **LIST-I** with **LIST-II**

| LIST-I |                     | LIST-II |                                |
|--------|---------------------|---------|--------------------------------|
| A.     | Breadth-first       | I.      | Minimal $h(p)$ , $p$ is a path |
| B.     | Greedy best first   | II.     | Last node added                |
| C.     | Depth - first       | III.    | Minimal cost ( $p$ )           |
| D.     | Lowest - cost first | IV.     | First node added               |

Choose the **correct** answer from the options given below:

1. A-III, B-IV, C-II, D-I
2. A-I, B-IV, C-II, D-III
3. A-IV, B-I, C-III, D-II
4. A-IV, B-I, C-II, D-III

**Options :**

611987131489. 1  
611987131490. 2  
611987131491. 3  
611987131492. 4

**Question Number : 74 Question Id : 61198733382 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Match the **LIST-I** with **LIST-II**

| LIST-I |     | LIST-II |                                         |
|--------|-----|---------|-----------------------------------------|
| A.     | DFA | I.      | Halting or accepting configuration      |
| B.     | PDA | II.     | Restricted tape bounded by input length |
| C.     | LBA | III.    | Empty stack or final state              |
| D.     | TM  | IV.     | Final state only                        |

Choose the **correct** answer from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-III, B-IV, C-II, D-I
3. A-II, B-III, C-I, D-IV
4. A-IV, B-III, C-II, D-I

**Options :**

611987131493. 1

611987131494. 2

611987131495. 3

611987131496. 4

**Question Number : 75 Question Id : 61198733383 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Match the **LIST-I** with **LIST-II**

| LIST-I |                        | LIST-II |                                                       |
|--------|------------------------|---------|-------------------------------------------------------|
| A.     | Supervised learning    | I.      | Explore data to find natural grouping                 |
| B.     | Unsupervised Learning  | II.     | Learn from feedback and optimize policy               |
| C.     | Reinforcement Learning | III.    | Predict labeled output from training data             |
| D.     | Deep Learning          | IV.     | Hierarchical feature extraction using neural networks |

Choose the **correct** answer from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-III, B-I, C-II, D-IV
3. A-IV, B-III, C-II, D-I
4. A-III, B-IV, C-II, D-I

**Options :**

611987131497. 1

611987131498. 2

611987131499. 3

611987131500. 4