**Section 1 - Sequence Analysis**

**Ans 1.**

Sorted Suffix Array (GCAAGCG$) for Tree:

|  |  |
| --- | --- |
| **Suffix Index** | **Suffix** |
| 8 | $ |
| 3 | AAGCG$ |
| 4 | AGCG$ |
| 2 | CAAGCG$ |
| 6 | CG$ |
| 7 | G$ |
| 1 | GCAAGCG$ |
| 5 | GCG$ |

Suffix Tree for GCAAGCG$:

G

$

AAGCG$

C

G$

C

AAGCG$

G$

$

A

AGCG$

GCG$

***1***

***1***

***1***

***2***

7

1

5

2

6

8

4

3

***0***

**Ans 2.**

Sequence 1 = GCAAGCG, Sequence 2 = AAG and Sequence 3 = TGC

|  |  |
| --- | --- |
| **Suffix Index** | **Suffix** |
| 4 | $ |
| 3 | C$ |
| 2 | GC$ |
| 1 | TGC$ |

Sorted Suffix Array 1 (GCAAGCG$) Sorted Suffix Array 2 (AAG$) Sorted Suffix Array 3 (TGC$)

|  |  |
| --- | --- |
| **Suffix Index** | **Suffix** |
| 8 | $ |
| 3 | AAGCG$ |
| 4 | AGCG$ |
| 2 | CAAGCG$ |
| 6 | CG$ |
| 7 | G$ |
| 1 | GCAAGCG$ |
| 5 | GCG$ |

|  |  |
| --- | --- |
| **Suffix Index** | **Suffix** |
| 4 | $ |
| 1 | AAG$ |
| 2 | AG$ |
| 3 | G$ |

Generalised Suffix Tree:

G

$

AAGCG$

C

G$

C

AAGCG$

G$

$

A

CG$

CG$

1,7

1,1

1,5

1,2

1,6

1,8

1,4

1,3

2,4

3,4

2,3

$

3,3

A

$

2,1

G

$

2,2

$

3,2

3,1

TGC$

G