COMPUTER SCIENCE DEPARTMENT

Total Marks: ___04___

Obtained Marks: _____

Graph Theory

Assignment # 03

Last date of Submission: 23 April 2025, 6:30 pm to 9:30pm

Submitted To: **Bilal Ahmad** _____
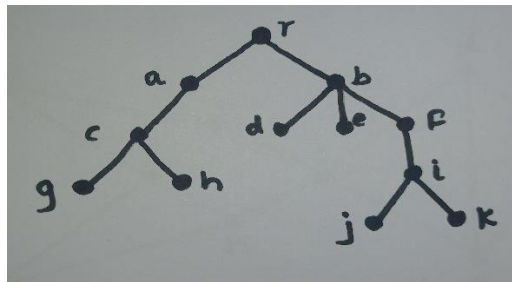
Student Name: _____

Reg. Number: _____
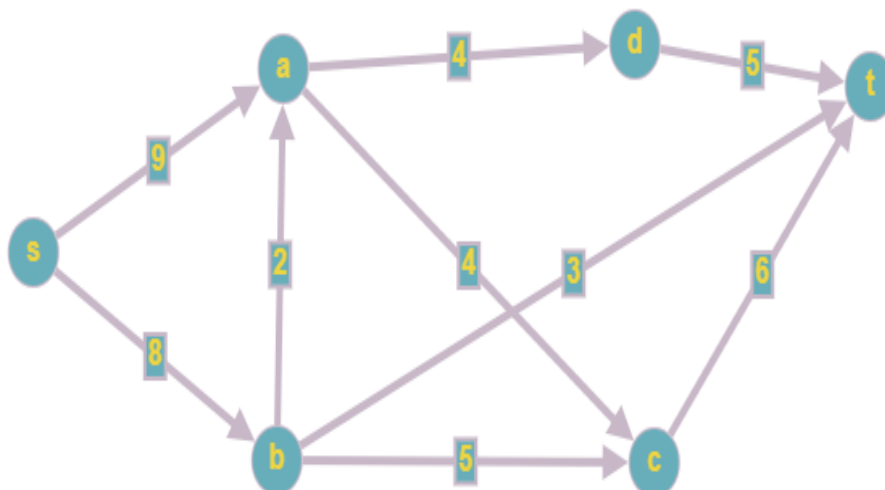
COMPUTER SCIENCE DEPARTMENT

__Instructions__: Copied or shown assignments will be marked zero. Late submissions are not entertained in any case.

Question No.1: For the rooted tree T below, with root r, identify the following. (1.0)
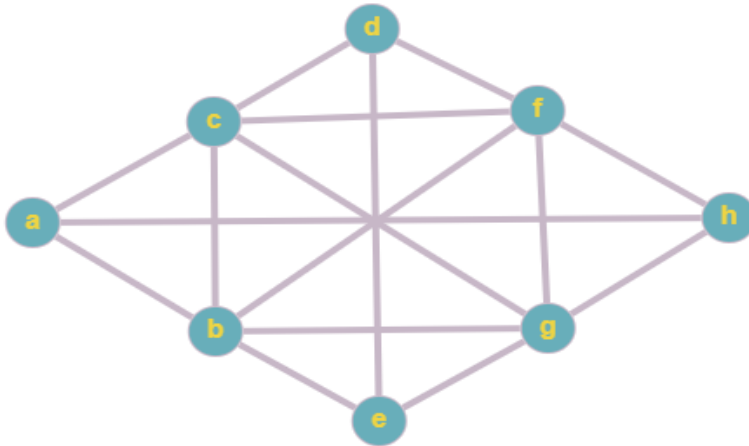

a) Level of r, f, h and k
b) The height of T
c) Parents of r, b, c, f, i
d) Children of r, b, c, f, i
e) Ancestors of r, a, d, h, k
f) Decendants of r, a, d, h, k
g) Siblings of a, f,h,i

Question No.2: For above graph, find max flow in the transport network   (1.0)
        using labeling procedure. Also determine corresponding min cut.

Following Graph for **(Q3 and Q4)**

COMPUTER SCIENCE DEPARTMENT

Question No.3: (1.0)

1) Find the chromatic number $\varkappa(G)$
2) Find the chromatic index
3) Determine which graph is perfect
4) Draw line graph $L(G)$.

Question No.4: (1.0)

a) Use Chord method to find planarity of graph
b) Find crossing number.