



FACULTY OF ENGINEERING & TECHNOLOGY

BCA-302 Computer Networks

Lecture-23

Mr. Dilip Kumar J Saini

Assistant Professor

Computer Science & Engineering

OUTLINE

- **QUALITY OF SERVICE**
- **TRAFFIC SHAPING**
- **PACKET SCHEDULING**
- **ADMISSION CONTROL**
- **INTEGRATED SERVICES**

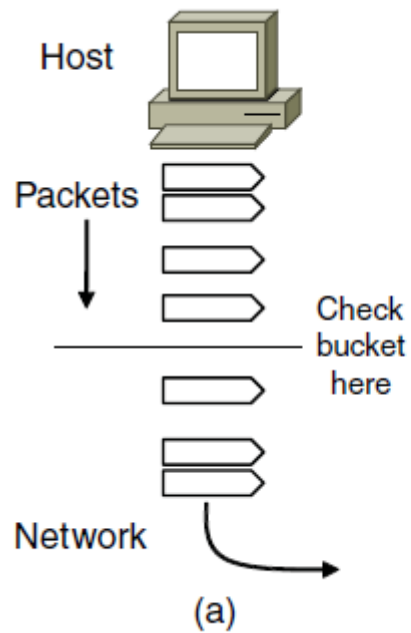


QUALITY OF SERVICE

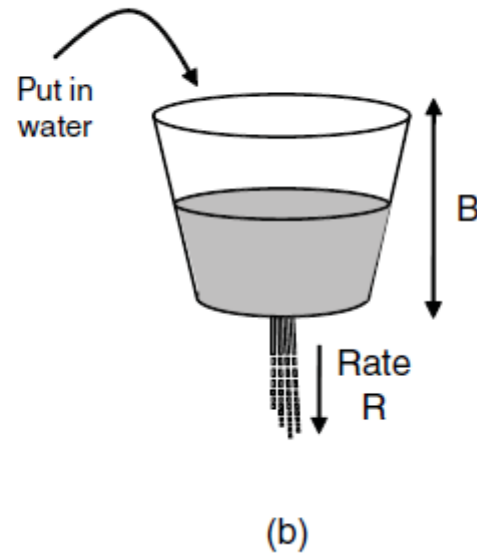
Application Requirements

Application	Bandwidth	Delay	Jitter	Loss
Email	Low	Low	Low	Medium
File sharing	High	Low	Low	Medium
Web access	Medium	Medium	Low	Medium
Remote login	Low	Medium	Medium	Medium
Audio on demand	Low	Low	High	Low
Video on demand	High	Low	High	Low
Telephony	Low	High	High	Low
Videoconferencing	High	High	High	Low

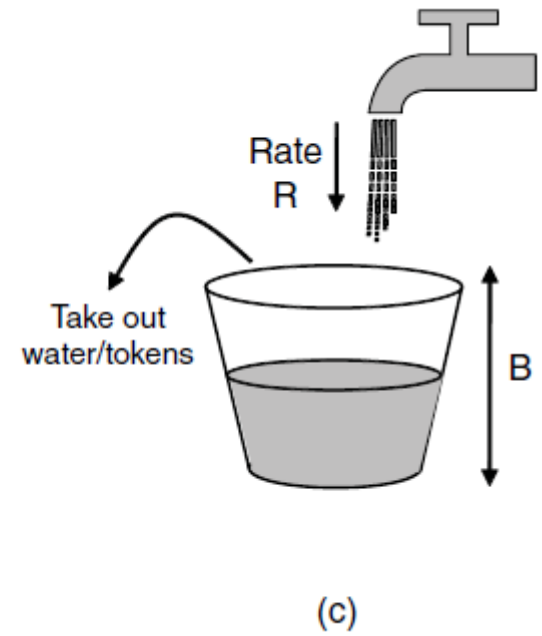
TRAFFIC SHAPING



(a) Shaping packets.



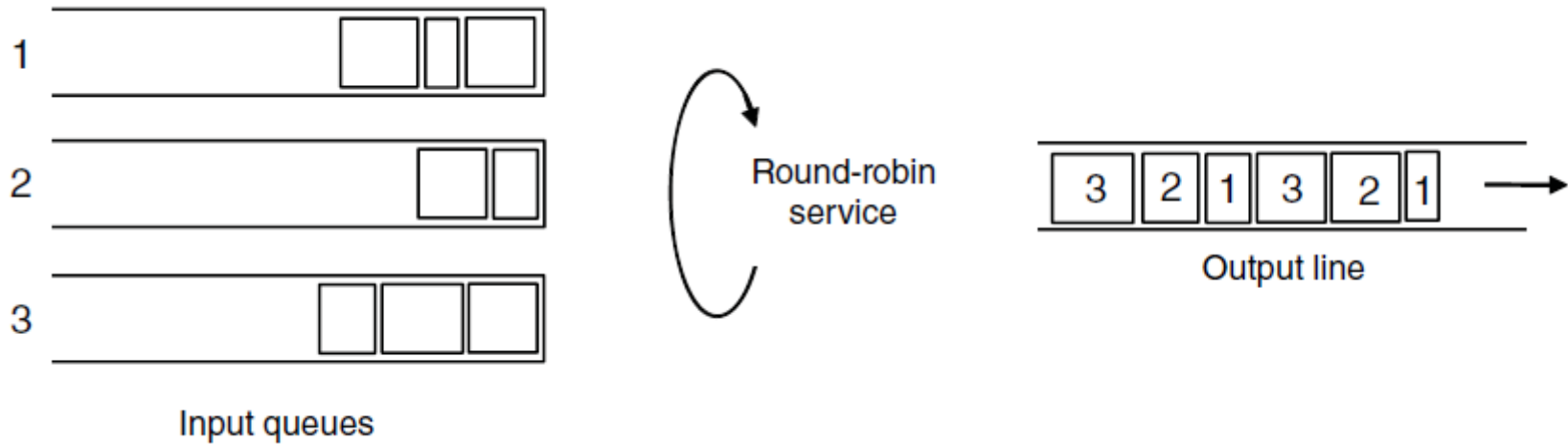
(b) A leaky bucket.



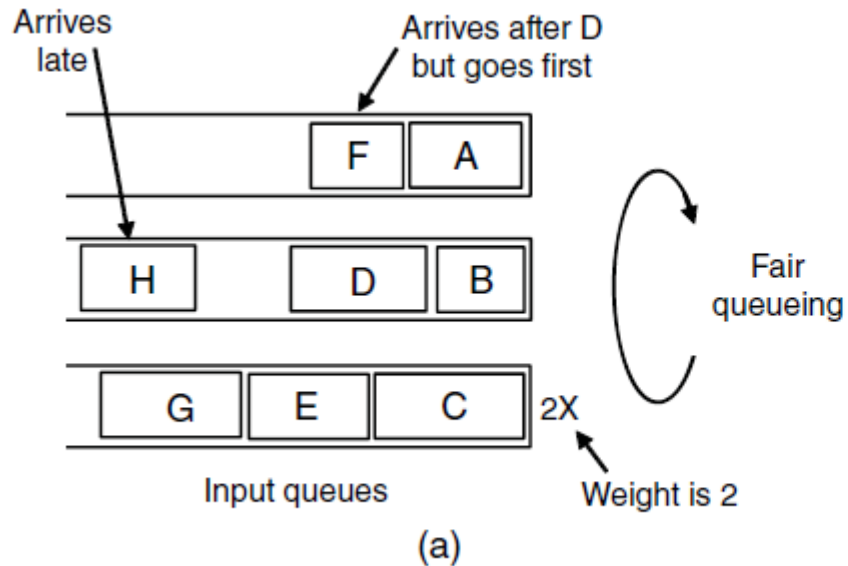
(c) A token bucket

PACKET SCHEDULING

Round-robin Fair Queuing



PACKET SCHEDULING



(a)Weighted Fair Queueing.

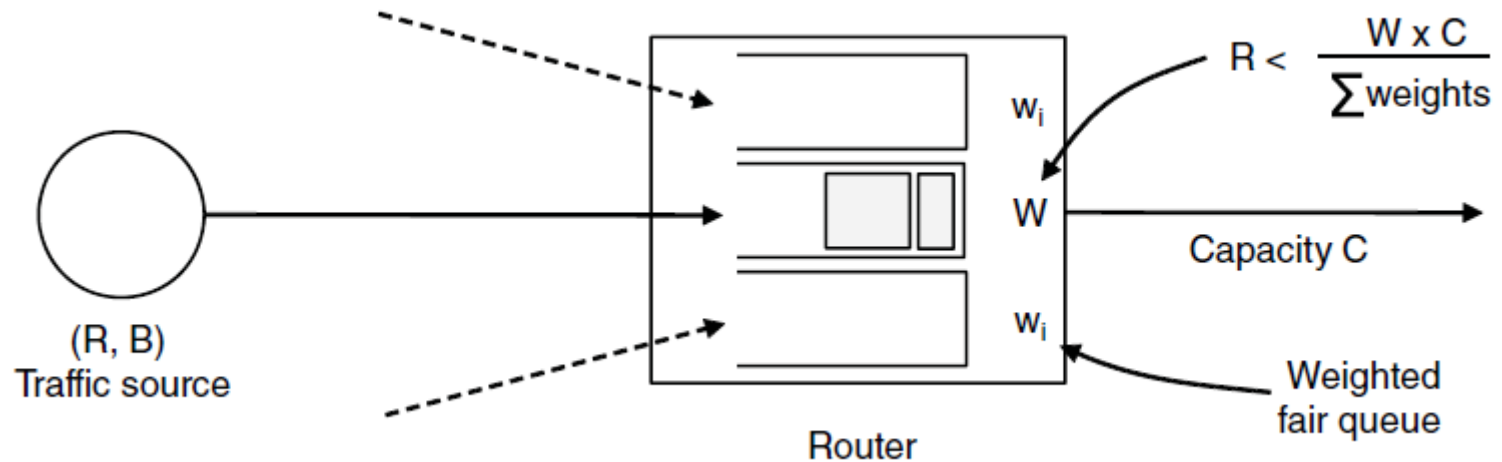
Packet	Arrival time	Length	Finish time	Output order
A	0	8	8	1
B	5	6	11	3
C	5	10	10	2
D	8	9	20	7
E	8	8	14	4
F	10	6	16	5
G	11	10	19	6
H	20	8	28	8

(b)

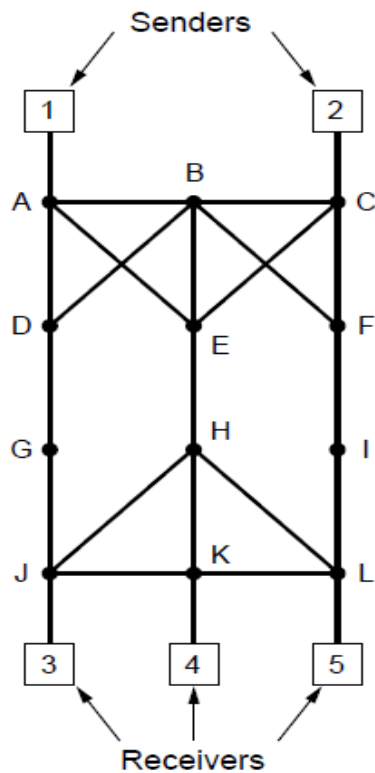
(b)Finishing times for the packets.

ADMISSION CONTROL

Bandwidth and delay guarantees with token buckets and WFQ

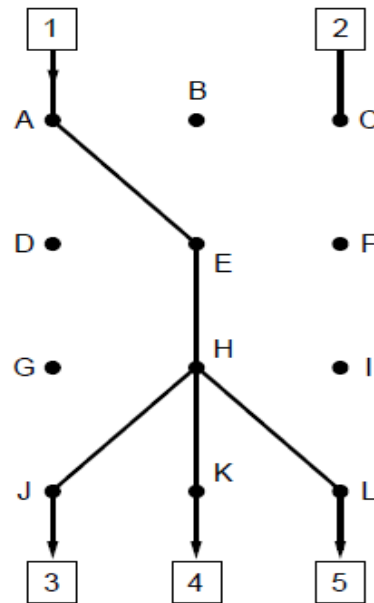


INTEGRATED SERVICES



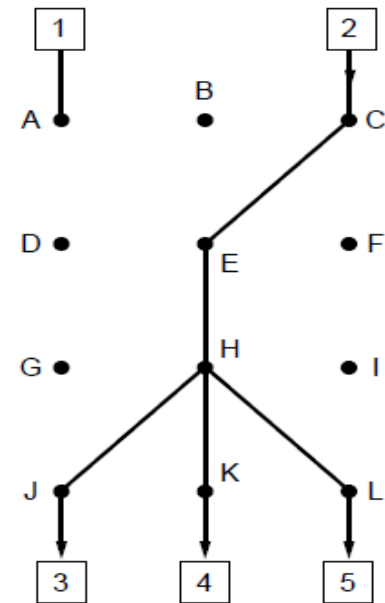
(a)

(a) A network.



(b)

(b) The multicast spanning tree for host 1.



(c)

(c) The multicast spanning tree for host 2.

Multiple Choice Question

MUTIPLE CHOICE QUESTIONS:

Sr no	Question	Option A	Option B	OptionC	OptionD
1	What is interframe gap?	idle time between frames	idle time between frame bits	idle time between packets	idle time between networks
2	. An ethernet frame that is less than the IEEE 802.3 minimum length of 64 octets is called _____	short frame	runt frame	mini frame	man frame
3	What is the access point (AP) in a wireless LAN?	device that allows wireless devices to connect to a wired network	wireless devices itself	both device that allows wireless devices to connect to a wired network and wireless devices itself	all the nodes in the network
4	In wireless ad-hoc network _____	access point is not required	access point is must	nodes are not required	all nodes are access points
5	Which multiple access technique is used by IEEE 802.11 standard for wireless LAN?	CDMA	CSMA/CA	ALOHA	CSMA/CD

REFERENCES

- <http://www.engppt.com/2009/12/networking-fourozan-ppt-slides.html>

