

Course Title: Advances in Multimedia
Date: 15/01/2011 (11:00– 13:00)
No. of Questions: 5 Questions
Time: 2:00 hours
Grade: 50 (100 for external students)

University of Palestine



Final Exam
1st semester 2010/2011

Instructor Name: Eng. Wisam Zaqoot
Student No.: _____
Student Name: _____
College Name: IT
Dep. / Specialist: Multimedia

First Question

No. of Branches (1)

(15/50)

Q1 B1: Mark the correct sentences (✓) and mark the wrong sentences (X):

- 1- FTP is an application layer protocol, while TCP and UDP are network layer protocols. ()
- 2- STP cables can give better connection than UTP cables. ()
- 3- Multicast is the delivery of a packet to a group of destination computers. ()
- 4- In general, copying and falsification of analog media is easier than digital media. ()
- 5- MN applications are sensitive to delay and jitter, but can tolerate occasional loss of data. ()
- 6- Jitter is the variability of packet delays within the same packet stream. ()
- 7- When streaming a stored multimedia content in a network, data can be transferred as fast as the network path will allow. ()
- 8- Best-effort service in the Internet means that there are guarantees on packet delay and loss ()
- 9- Most Multimedia Networking applications use TCP protocol since it is connection oriented and careful about network congestion. ()
- 10- RTSP can be used to specify how media player buffers multimedia streams. ()
11. RSVP is a **Soft State** protocol. ()
12. RTSP uses out-of-band connection to transfer control info and in-band connection for data. ()
13. In contrast to FEC, using interleaving doesn't waste bandwidth since it doesn't make redundancy overhead. ()
14. Each participant in videoconference increases the RTCP traffic it sends as number of conference participants increases. ()
15. The header of the RTP packet contains a **Payload Type** field to determine the type of encoding of the transmitted multimedia. ()
16. SIP protocol can work only with RTP and UDP protocols. ()
17. Under **non-preemptive priority queuing**, the transmission of a packet is not interrupted by a higher priority packet once it has begun. ()
18. In Round Robin scheduling, each class gets different weighted amount of service in each cycle. ()
19. Token bucket and WFQ can be used together to give a provable maximum delay in a queue. ()
20. DiffServ architecture is more scalable than IntServ, since DiffServ does the complex functions at edge routers. ()
21. The Differentiated Service Code Point (DSCP) in the IP packet header determines the PHB that the packet will receive. ()
22. Assured Forwarding PHB has 3 classes of traffic, each with 2 drop preference partitions. ()
23. In IntServ, routers maintain state info of allocated resources. ()
24. In RSVP, Path Messages are sent by the receiver, while Reservation Messages are sent by the sender. ()
25. RSVP protocol is a **receiver-oriented** protocol. ()
26. In **Wildcard-Filter** reservation style, the receiver receives from all senders and its bandwidth reservation is shared between senders. ()
27. In **Fixed-Filter** reservation style, the receiver receives from all senders but its bandwidth reservation is not shared between senders. ()
28. Fixed-filter reservation is appropriate for video teleconferencing while wildcard filter and the shared-explicit styles are appropriate for audio conversations. ()
29. In **Public Key Encryption**, the sender and the receiver will share the same secret key. ()
30. Watermarking can be used to encode the number of times the content has been legally used. ()

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Second Question **No. of Branches (1)** **(6/50)**

Q2 B1: Define the following terms:

- 1- Telematics
- 2- Streaming
- 3- Maximum Burst Size

Third Question **No. of Branches (1)** **(4/50)**

Q3 B1: What is the main job of the following protocols:

- 1- RTP
- 2- RTSP
- 3- RTCP
- 4- RSVP

Fourth Question **No. of Branches (1)** **(5/50)**

Q4 B1: Draw the interactions between a web server, streaming sever, web browser and media player in a stored MM streaming design.

Fifth Question **No. of Branches (1)** **(20/50)**

Q5 B1: Answer the following questions:

- 1- What are the 4 layers of the Internet Protocol Suite?
- 2- What are the 4 most critical components when studying multimedia networking?
- 3- What is the difference between Network Loss and Delay Loss of packets in a network?
- 4- Give 3 items of our bag of tricks used to enhance the internet best-effort service. Are these techniques enough to provide reliable service for multimedia networking applications?
- 5- What are the 4 main principles of QoS?
- 6- Suppose that we use WFQ were we have 4 classes (A, B, C, D) with weights 2, 3, 1, 4 respectively. The transmission rate of the link is 1Mbps. If all classes have queued packets, what is the bandwidth that each class will have?
- 7- Consider a token bucket where it can hold up to 100 tokens, and tokens are generated at a rate 20 tokens/second. What is the maximum number of packets that can be admitted by this token bucket in 30 seconds?
- 8- What is the difference between R-spec and T-spec?
- 9- What is the job of the **Reservation Styles**?
- 10- What is the **Intellectual Property**?

Good Luck