

Program: BE Biomedical Engineering

Curriculum Scheme: Revised 2012

Examination: Final Year Semester VII

Course Code: BMC705 and Course Name: Networking & Information System in Medicine

Time: 1 hour

Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

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| Q1. | What is the IEEE 802.3 standard popularly known as? |
| Option A: | WiFi |
| Option B: | LLC |
| Option C: | Token bus |
| Option D: | Ethernet |
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| Q2. | Which of the following fields contains error detection information in the Ethernet frame? |
| Option A: | CRC |
| Option B: | Preamble |
| Option C: | Source address |
| Option D: | SFD |
| | |
| Q3. | At which layer of the TCP/IP protocol suite is the Port number used? |
| Option A: | Application layer |
| Option B: | Transport layer |
| Option C: | Network layer |
| Option D: | Physical layer |
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| Q4. | Which of the following layers of the OSI model is responsible for translation, compression, and encryption? |
| Option A: | Session layer |
| Option B: | Application layer |
| Option C: | Presentation layer |
| Option D: | Network layer |
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| Q5. | For which of the following networks "WiMAX" is used as a standard? |
| Option A: | Personal area network |
| Option B: | Local area network |
| Option C: | Metropolitan area network |
| Option D: | Wide area network |
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| Q6. | What is the size of IPv6 address? |

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| Option A: | 128 bit |
| Option B: | 32 bit |
| Option C: | 48 bit |
| Option D: | 64 bit |
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| Q7. | In subnetting the number of addresses in each subnet has to be _____. |
| Option A: | a power of 2 |
| Option B: | a multiple of 128 |
| Option C: | divisible by 128 |
| Option D: | divisible by 64 |
| | |
| Q8. | A three-layer switch is a faster and more sophisticated form of which of the following connecting devices? |
| Option A: | Repeater |
| Option B: | Link-layer switch |
| Option C: | Router |
| Option D: | Hub |
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| Q9. | At which layer of OSI model is the Datagram switching normally done? |
| Option A: | Physical layer |
| Option B: | Network layer |
| Option C: | Data link layer |
| Option D: | Presentation layer |
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| Q10. | In which of the following network security services, the user is verified prior to access to the system resources (files, for example)? |
| Option A: | Message Integrity |
| Option B: | Message Authentication |
| Option C: | Entity Authentication |
| Option D: | Message Nonrepudiation |
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| Q11. | How many keys are needed in asymmetric-key cryptography for a two-way communication between Alice and Bob? |
| Option A: | Two keys |
| Option B: | Four keys |
| Option C: | Six keys |
| Option D: | Eight keys |
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| Q12. | If shift cipher with key = 8 is used to encrypt the message "BANANA", what would be the transformed ciphertext? |
| Option A: | FERERE |
| Option B: | NMZMZM |
| Option C: | DCPCPC |
| Option D: | JIVIVI |
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| Q13. | Which of the following is not a simple modern cipher? |

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| Option A: | XOR cipher |
| Option B: | Caesar cipher |
| Option C: | S-box cipher |
| Option D: | P-box cipher |
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| Q14. | Which of the following is not a basic component of the PACS? |
| Option A: | Acquisition gateway |
| Option B: | PACS Server and Archive |
| Option C: | PACS Workstations |
| Option D: | HIS/RIS database |
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| Q15. | Generally who uses the PACS review workstation? |
| Option A: | Radiologist |
| Option B: | Patient's relative |
| Option C: | Referring clinician |
| Option D: | Technologist |
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| Q16. | Which of the following a PACS display workstation doesn't include? |
| Option A: | Communication network connection |
| Option B: | Global database |
| Option C: | Display |
| Option D: | Resource management and Processing software |
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| Q17. | Which of the following is true for the client-server model of PACS? |
| Option A: | Images are automatically sent to the designated diagnostic and review workstations from the server. |
| Option B: | The system is a completely portable as the web-based application can be used on site as well as at home with an Internet connection. |
| Option C: | Images are centrally archived in the PACS server. |
| Option D: | Workstations have short-term cache storage. |
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| Q18. | Which of the following is an element of the Hospital Operation Component of HIS? |
| Option A: | Material Services |
| Option B: | General Ledger |
| Option C: | Payroll |
| Option D: | Pathology System |
| | |
| Q19. | Which of the following RAID levels has relatively poor write performance but excellent read performance that matches well to the clinical requirements of PACS? |
| Option A: | RAID 10 |
| Option B: | RAID 3 |
| Option C: | RAID 4 |
| Option D: | RAID 5 |
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| Q20. | Which of the following is not a valid method for interfacing PACS with HIS and RIS? |
| Option A: | Workstation Emulation |
| Option B: | Database-to-Database Transfer |
| Option C: | Interface Engine |
| Option D: | Gateway Emulation |
| Q21. | Which of the following PACS server models is based on the theory of distributing tasks evenly so that no one system is overwhelmed? |
| Option A: | Single server model |
| Option B: | Multi server model |
| Option C: | Load balancing model |
| Option D: | Clustered failover model |
| Q22. | Which of the following is not one of the key concepts in the IHE technical framework? |
| Option A: | Data model |
| Option B: | IHE actors |
| Option C: | IHE producer |
| Option D: | Integration profile |
| Q23. | Which of the following profiles is not a part of the Patient Care Coordination IHE domain? |
| Option A: | Patient Synchronized Application (PSA) |
| Option B: | Exchange of Personal Health Record Content (XPHR) |
| Option C: | Emergency Department Referral (EDR) |
| Option D: | Medical Summaries (MS) |
| Q24. | In the IHE model the abbreviation ADT stands for |
| Option A: | Application, Duplication, Triplication |
| Option B: | Active, Denial, Technology |
| Option C: | Admission, Discharge, Transfer |
| Option D: | Access, Duty, Training |
| Q25. | Which of the following is not a valid segment contained in the HL7 message "patient admission"? |
| Option A: | Message header segment |
| Option B: | Event type segment |
| Option C: | Patient identification segment |
| Option D: | Patient colleague visit segment |

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| Question | Correct Option (Enter either 'A' or 'B' or 'C' or 'D') |
|-----------------|-----------------------------------------------------------------------|
| Q1. | D |
| Q2. | A |
| Q3. | B |
| Q4 | C |
| Q5 | C |
| Q6 | A |
| Q7 | A |
| Q8. | C |
| Q9. | B |
| Q10. | C |
| Q11. | B |
| Q12. | D |
| Q13. | B |
| Q14. | D |
| Q15. | C |
| Q16. | B |

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| Q17. | C |
| Q18. | D |
| Q19. | D |
| Q20. | D |
| Q21. | C |
| Q22. | C |
| Q23. | A |
| Q24. | C |
| Q25. | D |