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Question Paper Code:U9B73

B.E./B.Tech. DEGREE EXAMINATION, NOV 2025

Open Elective

21UBM973- COMPUTER APPLICATION IN MEDICINE

Biomedical Engineering

(Regulations 2021)

(Common to All Engineering Branches)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. List out the significance of a network card in a computer. CO1- U
2. Difference between Serial and Parallel ports in terms of data transmission. CO1- U
3. How many numbers of devices that can be attached to GPIB? CO1- U
4. Write short notes on Semantic network. CO1- U
5. Describe the Computer Based Testing (CBT) and what is one advantage it offers over traditional testing methods. CO1- U
6. Give a short notes an Active Learning Centre. CO1- U
7. Identify role of patient self-management education play in the management of chronic diseases? CO1- U
8. Write a short notes on clinical notes. CO1- U
9. In what ways does the electronic health record benefit users? CO1- U
10. Identify the components of the EHR. CO1- U

PART – B (5 x 16= 80 Marks)

11. (a) Apply that involves replacing an ISA-based graphics card with a modern PCIe graphics card. Explain the steps you would take to ensure compatibility and enhance performance. CO2 - App (16)

Or

- (b) Design an approach for selecting and configuring disk controllers to maximize performance for a system handling large volumes of data. Describe the criteria you would use for selecting disk controllers and explain how you would configure them to achieve optimal performance. CO2 - App (16)
12. (a) Explain the key differences between GPIB and serial interfaces in terms of data transfer methods, speed, and typical applications. CO1 - U (16)
Or
- (b) Describe how MEDLARS assists healthcare professionals and researchers in accessing relevant medical literature. Provide examples of its applications in medical research and clinical practice. CO1 - U (16)
13. (a) Make the use of Computer-Aided Instruction (CAI) systems, and what methods or criteria can be used to assess their effectiveness and quality? CO2 - App (16)
Or
- (b) Examine how Preclinical CAI affects the preclinical stages of medical education and whether it can improve student learning results. CO2 - App (16)
14. (a) Analyze the significance, guiding ideas, challenges, and strategies associated with providing patient self-management education that works in the healthcare setting. CO5 - Ana (16)
Or
- (b) Analyze how electronic health records (EHRs) have changed the clinical note-taking process and evaluate the effects these modifications have had on patient care, healthcare practitioners, and healthcare facilities. CO5 - Ana (16)
15. (a) Implement a strategy for ensuring that the new EHR system can effectively communicate with other healthcare systems and providers. Include specific standards or protocols you would use and describe how you would apply them in practice. CO4 - App (16)
Or

- (b) Apply the principles of interoperability to identify and describe three key standards that should be considered during the EHR implementation process. Explain how each standard contributes to the successful exchange and integration of health information. CO4 - App (16)

