Radiologic Science II

Final Exam – Essay Topics

1. Explain how radiographic exposure is produced in Direct Radiography and why exposure accuracy is critical for image quality and patient safety.

2. Discuss the exposure index used in the Direct Radiography (DR) system in the Hostos lab and explain its purpose.

3. Explain the roles of EI, TI, and DI in DR and discuss how technologists use these values to evaluate technique accuracy and consistency.

4. Discuss the relationship between kVp and mAs and explain how each affects detector exposure, image appearance, and patient dose.

5. Explain how changes in SID affect image exposure and describe how technologists compensate for these changes.

6. Discuss the factors that contribute to geometric unsharpness and explain how they affect recorded image sharpness.

7. Explain how magnification occurs in radiography and discuss the factors that influence image size.

8. Compare geometric sharpness and visibility of sharpness (recorded detail) and explain why both are important for diagnostic imaging.

9. Discuss the purpose and use of fixed kVp technique charts, including how they are constructed and applied in practice.

10. Explain how exposure errors (overexposure and underexposure) occur in Direct Radiography and how exposure indices help identify these errors.

11. Discuss how image brightness and contrast are controlled in digital radiography and explain why proper exposure technique remains essential.

12. Explain how focal spot size, SID, and OID work together to influence image sharpness and magnification.

13. Discuss the relationship between detector exposure and patient dose in Direct Radiography and why they are not the same.

14. Explain how exposure indices can be used to identify long-term exposure trends and prevent exposure creep.

15. Explain the role of PACS in digital radiography and discuss its impact on image storage, archiving, image distribution, and the continued use of hard-copy imagers.