

King Saud University

College of Applied Medical Science

Radiology department

Rad 454

1st med term exam

Day:

|  |  |
| --- | --- |
| Student Name: |  |
| ID: |  |
| Level: |  |

|  |  |
| --- | --- |
| Total mark |  |
| 20 |

1. CHOOSE THE CORRECT ANSWER (4points)

1. This type of flat-panel sensor uses thin films of silicon integrated with arrays of photodiodes.

1. Amorphous Silicon Detector
2. Charge-coupled devices
3. Non of the above

2.In CR \_\_\_\_\_\_\_\_ replaces film in the cassette as in conventional radiography.

1. Intensifying screens
2. photostimulable phosphor plate (PSP)
3. Digitizer

3. \_\_\_\_\_\_\_\_\_\_\_\_\_ used to identify the cassette or imaging plate and exam request to link the imaging plate with the patient exam.

1. Barcodes
2. Backing layers
3. The laser

4. The image on the monitor is composed of\_\_\_\_\_\_.

1. Dots
2. Pixels
3. Bits
4. Are the following statements True or False? (4 points)
5. Direct Conversion DR Scintillator converts visible photons to x-rays (\_\_F\_\_)
6. Cassette less system uses a flat panel detector or charge-coupled device (CCD) (\_\_T\_\_)
7. Data rate = bits per second in data communications. (\_\_T\_\_)
8. In conventional radiography Released light is captured by a PMT (photo multiplier tube). (\_\_F\_\_)
9. Fill the blanks with the appropriate word/s: 3points
10. **Software** is the program that runs the computer
11. The way each node is physically connected to the network called **Topology**.
12. **Input Devices** enable users to get data into the computer for processing.
13. The two types of digital radiography are **direct capture** & **indirect capture** .
14. **The digitizer** in CR assigns a numeric value to each pixel in a matrix according to the brightness of the light and its position.
15. LIST THREE OF: (6 points)
* ADC essential parts:
1. – Sampler
2. – Quantizer
3. – Coder
* CR Imaging-plate layers:
1. – Protective layer
2. – Phosphor, or active, layer
3. – Reflective layer:
4. Conductive layer
5. Color layer
6. Support layer
7. Backing layer
8. **What is the difference between? (1point)**
* Router:
* Gateway:
* Router:

device to interconnect SIMILAR networks, e.g. similar protocols , workstations and servers

* Gateway:

 device to interconnect DISSIMILAR protocols and servers, and Macintosh and IBM LANs and equipment

1. **DEFINE: (2 points)**
* **Digital imaging:**

any image acquisition process that produces an electronic image that can be viewed and manipulated on a computer.

* **Operating System (OS)**:

Monitors and controls all input / output and processing activities within a computer system. It is a program that controls the PC hardware and the operation of all other programs