

King Saud University

College of Applied Medical Science

Radiology department

Rad 454

1st med term exam

Day: Sunday

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

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

CHOOSE THE CORRECT ANSWER

1. \_\_\_\_\_\_\_\_ Contain data and programs to make the computer hardware work and cannot be changed, erased or lost when the computer is turned off.

1. RAM
2. CPU
3. ROM

2. \_\_\_\_\_\_\_\_ a group of computers connected together in a way that allows information to be exchanged between the computers.

1. Network
2. Communication
3. Segment

3. \_\_\_\_\_\_\_\_ is made by growing very thin crystalline needles (5 µm wide) that work as light-directing tubes, much like fiber optics.

1. Amorphous Silicon Detector
2. Charge-coupled devices
3. Cesium iodide scintillator

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

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

5. \_\_\_\_\_\_\_\_\_\_\_ 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. Laser

Are the following statements True or False?

1. RAM composes of series transistors that are arranged in an order to manipulate data received from the software. (\_\_F\_\_)
2. A computer with a slower bus size will be faster. (\_\_F\_\_)
3. Data rate = bits per second in data communications. (\_\_T\_\_)
4. In conventional radiography Released light is captured by a PMT (photo multiplier tube). (\_\_F\_\_)
5. With CR systems, no chemical processor or darkroom is necessary. (\_\_T\_\_)

Fill the blanks with the appropriate word/s:

1. The two types of digital radiography are *direct capture & indirect capture.*
2. The medical images are stored in a *DICOM* format.
3. Byte is equal to \_\_*\_8*\_\_\_ Bits
4. *Arithmetic / Logic* unit executes arithmetic and logic operations including addition, subtraction, multiplication and comparisons
5. Matrix size is determined by the *size* of the pixels and the *spacing* between them
6. The *higher* the resolution setting, the *more* you can display on the monitor
7. *The digitizer* in CR assigns a numeric value to each pixel in a matrix according to the brightness of the light and its position.

**ANSWER THE FOLLOWING QUESTIONS:**

What is the basic function of:

* CPU:

*Is to read data from storage, manipulate the data, and then move the data back to storage or send it to external devices*

* The sampler in ADC:

*The conversion of continuous time signal into a discrete signal obtained by taking “samples” of a continuous-time signal at a discrete time instants.*

Successful transmission of data depends on two characters, what are they?

* + *The quality of the signal being transmitted*
  + *Characteristics of the transmission medium*

LIST THREE OF:

* PACS uses:

1. Reading stations
2. Physician review stations
3. Web access
4. Technologist quality control stations
5. Administrative stations
6. Archive systems
7. Multiple interfaces to other
8. Hospital and radiology systems

* Common Topologies types

1. Bus.
2. Ring.
3. Star.

GOOD LUCK,

AREEJ AOUFI