

醫學影像資訊管理士測驗

Medical Imaging Information
Administrator

2025 年 8 月 24 日 星期日

1. 除題意不清楚或是圖片有問題，禁止詢問與試題有關的問題。
2. 應答時禁止使用任何文件。
3. 請在電腦答案卡上圈選作答

項目	填寫內容
姓名	您的中文與英文姓名
試題名稱	MIIA Test
項目	不用填寫
科目	不用填寫
受試者識別代碼	您的准考證號碼後五碼：24XXX 將您選定之數字的圓圈塗滿。
科目代碼	不用填寫
地點代碼	不用填寫
作答方式	本測驗共有 90 題問題。請使用 1 到 90 作答欄位。 請將測驗卷 Q1 的答案填入答案卷的答案選擇 1。Q2 = 答案選擇 2，Q3 = 答案選擇 3...Q90 = 答案選擇 90。

1. Which of the following is NOT computer hardware?
 - (A) Power Supply
 - (B) Storage media such as Hard Disk Drive
 - (C) SPSS Software Suite
 - (D) Display Card (Graphics Card)
 - (E) Mainboard (Motherboard)

2. Which of the following statements is incorrect regarding the operation of the Central Processing Unit (CPU)?
 - (A) CPU operation starts by fetching instructions and data from RAM.
 - (B) Registers are used to store programs for initiating computer startup.
 - (C) Arithmetic Logic Unit (ALU) performs mathematical calculations.
 - (D) Control Unit manages the overall operation of the CPU.
 - (E) The number of transistors and clock speed affect the CPU's performance.

3. Which of the following statements is incorrect about memory?
 - (A) ROM in BIOS (Basic Input Output System) loads the operating system during startup.
 - (B) Volatile Memory retains data with or without electrical power.
 - (C) Flash Memory is a type of Non-Volatile Memory.
 - (D) Random Access Memory (RAM) is Volatile Memory.
 - (E) Cache Memory helps the CPU work faster without waiting for slower devices.

4. Which of the following statements is incorrect about application programs and software?
 - (A) iOS is considered an Operating System.
 - (B) An algorithm is a sequence or procedure to accomplish a task.
 - (C) JAVA is considered a high-level programming language.
 - (D) A compiler translates programming languages into machine language.
 - (E) MATLAB belongs to the same category as Assembly language.

5. Which of the following is *NOT* one of the 5Vs of Big Data?
 - (A) Volume – large amount of data
 - (B) Velocity – data changes continuously
 - (C) Visibility – data is clearly visible
 - (D) Variety – various formats of data
 - (E) Veracity – accuracy of data

6. Which of the following statements is *incorrect* about database systems?
 - (A) A database stores and organizes data systematically in an electronic format.
 - (B) It can store any type of data, including text, numbers, images, videos, and files.
 - (C) Database Management Systems (DBMS) are used to store, retrieve, and edit data.
 - (D) In computing, the term database can also refer to DBMS, database systems, and related applications.
 - (E) A database system works similarly to a file system that comes pre-installed with an operating system.

7. Which of the following statements is *incorrect* about file systems?
- (A) A file system is a technique for storing data in a database system.
 - (B) The basic unit of a file system is called a file.
 - (C) A file system is a crucial component in most storage devices, such as hard drives, CDs, and DVDs.
 - (D) A file system allows devices to maintain the physical location of files for later access.
 - (E) A file system enables authorized users to access files over a network.
8. Which of the following correctly orders data from smallest to largest in Data Representation?
- (A) Byte → Field → Record → File → Bit
 - (B) Byte → Field → Record → Bit → File
 - (C) Bit → Byte → Field → Record → File
 - (D) Byte → Bit → Field → Record → File
 - (E) Byte → Bit → Record → File → Field
9. Which of the following statements is incorrect about the Primary Key in database design?
- (A) Primary Key and Secondary Key can both uniquely reference specific data.
 - (B) A Primary Key is used to uniquely identify rows of data.
 - (C) Primary Key values can be duplicated across rows.
 - (D) A Primary Key must always have a value (cannot be null).
 - (E) Examples of a Primary Key include the Hospital Number (HN).
10. How many bits does the ASCII standard use to encode basic characters?
- (A) 4 bits
 - (B) 7 bits
 - (C) 9 bits
 - (D) 10 bits
 - (E) 16 bits
11. What is the primary use of ASCII?
- (A) Image encoding
 - (B) Audio encoding
 - (C) Representation of characters and symbols in computers
 - (D) Data compression
 - (E) Video encoding
12. What does SQL stand for?
- (A) System Query Language
 - (B) Structured Query Language
 - (C) Server Query Logic
 - (D) Standard Question Language
 - (E) Sequential Query Language

13. Which SQL command is used to retrieve data from a database?
- (A) UPDATE
 - (B) DELETE
 - (C) SELECT
 - (D) INSERT
 - (E) ALTER
14. What is the function of a Primary Key in SQL?
- (A) To store duplicate data in a table
 - (B) To uniquely identify each row in a table
 - (C) To link data between different databases
 - (D) To set default values for a table
 - (E) To delete all data from a table
15. Which SQL command retrieves all data from a table named 'employees'?
- (A) SELECT ALL FROM employees;
 - (B) FETCH * FROM employees;
 - (C) SELECT * FROM employees;
 - (D) GET * FROM employees;
 - (E) SHOW TABLE employees;
16. Which of the following is a key feature of a relational database?
- (A) Uses a tree structure
 - (B) Uses tables as the primary structure
 - (C) Does not support the use of Primary Keys
 - (D) Cannot manage data using SQL
 - (E) No relationships between data in different tables
17. Which of the following is a commonly used lossless compression technique for DICOM images in PACS?
- (A) JPEG
 - (B) PNG
 - (C) Wavelet Compression
 - (D) Run-length encoding
 - (E) TIFF
18. What is a disadvantage of lossy compression for medical image files?
- (A) Increases file size
 - (B) Risk of losing important information in the medical image
 - (C) Speeds up file opening
 - (D) Increases diagnostic accuracy
 - (E) Requires special software to open files
19. Which of the following statements is correct about image compression?
- (A) Lossy compression produces images of the same quality as the original.

- (B) Lossless compression produces images of the same quality as the original.
 - (C) Lossy compression produces images of better quality than the original.
 - (D) Lossless compression produces images of lower quality than the original.
 - (E) None of the above is correct.
20. What is the primary purpose of compressing DICOM image files?
- (A) To increase image resolution
 - (B) To reduce file size and improve storage and transmission efficiency
 - (C) To enhance image color sharpness
 - (D) To make images accessible only through specialized software
 - (E) To prevent data loss
21. When a radiologic technologist wants to preserve the original image quality while reducing file size, which compression method should be used?
- (A) Lossy JPEG
 - (B) JPEG 2000 Lossless
 - (C) MPEG Compression
 - (D) GIF Encoding
 - (E) BMP Uncompressed
22. In a RAID 5 system with 5 disks, each having a capacity of 500 GB, which of the following describes the storage capacity of the system?
- (A) The total storage capacity is 1,500 GB.
 - (B) The total storage capacity is 2,000 GB.
 - (C) The total storage capacity is 2,500 GB.
 - (D) The total storage capacity is 2,000 GB with 500 GB used for parity.
 - (E) The total storage capacity is 1,000 GB.
23. In a RAID 5 system, which of the following is the correct method for calculating the total storage capacity?
- (A) Total capacity = (Number of disks – 1) × Capacity of each disk
 - (B) Total capacity = Number of disks × Capacity of each disk
 - (C) Total capacity = Capacity of each disk × 2
 - (D) Total capacity = Total disk capacity – Capacity used for parity
 - (E) Total capacity = (Number of disks – 2) × Capacity of each disk
24. In a RAID 5 system with 4 disks, where one disk is used for storing parity data and the remaining disks are used for storing actual data, and each disk has a capacity of 250 GB, what is the usable storage capacity?
- (A) 750 GB
 - (B) 1,000 GB
 - (C) 500 GB
 - (D) 250 GB
 - (E) 1,250 GB

25. RAID 5 uses parity data to help recover information in case of a failure. However, the use of parity introduces which of the following limitations?
- (A) Increases the total storage capacity
 - (B) Reduces the usable storage capacity
 - (C) Increases the speed of data access
 - (D) Reduces the number of disks needed for system installation
 - (E) Does not affect the storage capacity
26. In a RAID 6 system using 6 disks, each with a capacity of 1 TB, what is the total usable storage capacity?
- (A) 6 TB
 - (B) 5 TB
 - (C) 4 TB
 - (D) 3 TB
 - (E) 2 TB
27. Which of the following best describes the meaning of Short-term Storage?
- (A) Permanent storage of medical images on the cloud
 - (B) Storage of images for long-term research purposes
 - (C) Storage of newly acquired images for rapid diagnosis
 - (D) Storage of patient voice data
 - (E) Backup of hospital accounting system data
28. What is the primary purpose of Long-term Storage in a PACS system?
- (A) Storing images for use within the same day
 - (B) Storing data to transfer to other departments
 - (C) Storing historical images for future comparison or reference
 - (D) Backing up physicians' voice recordings
 - (E) Storing data for use in accounting systems
29. Which of the following is NOT a characteristic of Short-term Storage?
- (A) Rapid access to images
 - (B) Used for short-term diagnostic purposes
 - (C) Stores images for no longer than 7 years
 - (D) Typically uses high-speed disks
 - (E) Supports simultaneous access by multiple users
30. Which technology is commonly used for Long-term Storage?
- (A) RAM
 - (B) Optical Disc or Magnetic Tape
 - (C) High-speed External SSD
 - (D) USB Flash Drive
 - (E) Bluetooth Storage
31. Which type of storage is most suitable for images that need urgent access, such as for emergency patients?

- (A) Long-term Storage
 - (B) Cloud Archive Storage
 - (C) Short-term Storage
 - (D) External Drive
 - (E) Offline Storage
32. Which of the following best describes a Full Backup?
- (A) Backing up only files that have changed
 - (B) Backing up all data and every file each time
 - (C) Backing up data in real-time
 - (D) Backing up only system files
 - (E) Backing up files only to portable devices
33. What is Incremental Backup?
- (A) Backup that deletes the original files after backup
 - (B) Backup that is performed only on the 1st day of the month
 - (C) Backup that always requires a network connection
 - (D) Backup of only selected folders
 - (E) Backup of only the files that have changed since the last backup
34. What is an advantage of Incremental Backup compared to Full Backup?
- (A) Requires less storage space
 - (B) Can only be done offline
 - (C) Takes more time to complete
 - (D) Requires a complete system backup each time
 - (E) Cannot restore data
35. What is a major limitation of Incremental Backup?
- (A) Requires a Full Backup as a base
 - (B) Consumes a large amount of RAM
 - (C) Only works with Windows operating systems
 - (D) Requires the use of USB cables only
 - (E) Cannot schedule backups
36. In which situation is a Full Backup most appropriate?
- (A) Hourly cloud-based backups
 - (B) Backing up only specific historical file changes
 - (C) Initial system setup to prepare for potential server data loss
 - (D) Backing up only edited work files
 - (E) Using a flash drive to store personal files
37. If a Full Backup is performed on Monday and Incremental Backups are performed on Tuesday through Friday, which backup files are needed to restore the system on Friday?
- (A) Friday only
 - (B) Monday through Friday

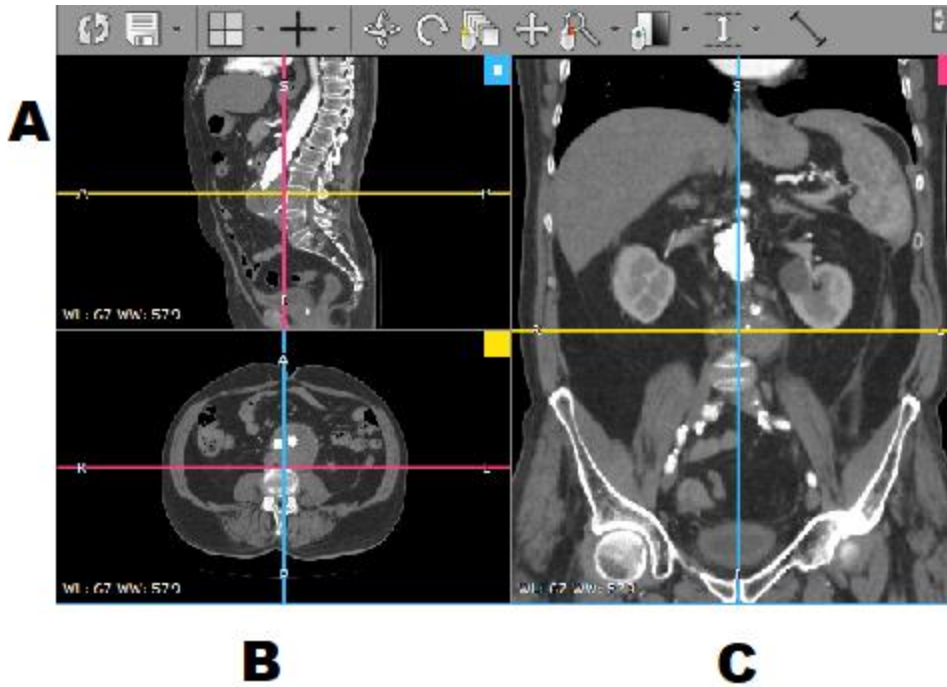
- (C) Monday, Tuesday, and Friday
 - (D) Monday, Tuesday, Wednesday, Thursday, and Friday
 - (E) Wednesday through Friday
38. Which of the following is NOT a goal of data backup?
- (A) Prevent data loss
 - (B) Increase CPU performance
 - (C) Allow data recovery in case of damage
 - (D) Maintain historical versions of data
 - (E) Reduce risks from system failures
39. Which protocol is commonly used in SAN (Storage Area Network) for high-speed communication?
- (A) HTTP
 - (B) FTP
 - (C) Fibre Channel
 - (D) Bluetooth
 - (E) HDMI
40. Which of the following is an advantage of using SAN?
- (A) High-speed data access and suitability for large-scale systems
 - (B) Inability to expand storage capacity
 - (C) Limited connection to a single device
 - (D) Cheapest among all storage systems
 - (E) Only compatible with Windows operating systems
41. Which type of port is primarily used by NAS devices to connect to a network?
- (A) HDMI
 - (B) USB
 - (C) Ethernet (LAN)
 - (D) VGA
 - (E) Serial Port
42. What is the primary objective of the IHE (Integrating the Healthcare Enterprise) initiative?
- (A) Developing new software for hospitals
 - (B) Facilitating efficient communication and health data exchange between different systems
 - (C) Reducing the number of healthcare personnel
 - (D) Managing hospital budgets more effectively
 - (E) Increasing revenue for private hospitals
43. Which standards form the basis for health data exchange in IHE?
- (A) TCP/IP
 - (B) JPEG
 - (C) HL7 and DICOM

- (D) SQL and XML
 - (E) IEEE 802.11
44. Which of the following is NOT a benefit of using IHE in hospitals?
- (A) Simplifies data exchange between systems
 - (B) Enhances patient data security
 - (C) Enables efficient sharing of medical images
 - (D) Reduces the quality of patient data to speed up transmission
 - (E) Supports interoperability between systems from different vendors
45. Which of the following best describes the meaning of "Profile" in the context of IHE?
- (A) A software package for image storage
 - (B) A guideline that defines system interoperability based on clear standards
 - (C) A patient registration form
 - (D) A user management tool within the system
 - (E) A program for converting medical data files
46. Scheduled Workflow (SWF) plays an important role in which area of the healthcare system?
- (A) Statistical analysis of patient data
 - (B) Management of medical budgets
 - (C) Management of the scheduling and flow of medical imaging procedures, such as radiography
 - (D) Storing medical records in document format
 - (E) Managing healthcare personnel through network systems
47. HL7 Version 2 was designed for which purpose?
- (A) Storing medical photographs
 - (B) Exchanging information between medical information systems
 - (C) Laboratory result analysis
 - (D) Generating financial reports
 - (E) Programming imaging control devices
48. In HL7, what does a message starting with "MSH" signify?
- (A) Patient registration
 - (B) Laboratory test data
 - (C) The initial segment of a message (Message Header)
 - (D) Image transmission
 - (E) Prescription transmission
49. Which of the following is NOT a highlight of HL7 Version 2?
- (A) Widely used in hospital systems
 - (B) Flexible message structure
 - (C) Supports real-time data exchange
 - (D) Uses a standard XML format resembling HTML
 - (E) Supports multiple continuously developed versions

50. What symbol is generally used to separate fields in HL7 V2 messages?
- (A) | (Pipe)
 - (B) , (Comma)
 - (C) : (Colon)
 - (D) # (Hash)
 - (E) ^ (Caret)
51. In HL7 segments, such as "PID," what is it typically used for?
- (A) Financial data
 - (B) Radiology image data
 - (C) Patient information
 - (D) Physician information
 - (E) Medication information
52. In HL7 V2 messages, what is the purpose of using the "^" character within a field?
- (A) To separate fields
 - (B) To separate components or represent a space within a field
 - (C) To indicate the end of a message
 - (D) To start a new segment
 - (E) To represent encrypted data
53. What is the main difference between a Vendor Neutral Archive (VNA) and a PACS?
- (A) PACS stores images from a single vendor, while VNA supports images from multiple vendors
 - (B) VNA is used for storing only one type of medical data
 - (C) PACS does not compress data, while VNA compresses data to save space
 - (D) PACS manages images from multiple systems, while VNA is limited to clinic images only
 - (E) VNA is used solely for storing audio files
54. Which of the following is a key feature of a Vendor Neutral Archive (VNA)?
- (A) Supports storage of images from various imaging system vendors without restriction
 - (B) Used to manage medical data exclusively in PDF format
 - (C) Data access is restricted to specific hospital departments
 - (D) Compresses images to reduce image resolution
 - (E) Supports only small data types such as text files
55. What is a limitation of PACS compared to VNA?
- (A) PACS supports image storage from multiple vendors
 - (B) PACS limits storage to DICOM format only
 - (C) PACS supports long-term management of medical imaging data
 - (D) PACS allows easy access to data from multiple sources
 - (E) PACS uses less storage space than a VNA system

56. What are the advantages of using VNA for medical imaging storage in hospitals?
- (A) Data can be accessed from any vendor without source file format restrictions
 - (B) Used for storing unimportant image data
 - (C) Can only store data from a single vendor
 - (D) Helps reduce long-term storage costs
 - (E) Can only store data in PDF format
57. Which DICOM Tag is used to specify the patient's Hospital Number?
- (A) (0010,0010)
 - (B) (0010,0020)
 - (C) (0010,0030)
 - (D) (0010,0040)
 - (E) (7FE0,0010)
58. Which DICOM Tag is used to specify the patient's image data?
- (A) (0010,0010)
 - (B) (0010,0020)
 - (C) (0010,0030)
 - (D) (0010,0040)
 - (E) (7FE0,0010)
59. What is the function of the ping -t command in Windows operating systems?
- (A) Continuously sends ping requests to the target until the user stops it.
 - (B) Sends ping requests a specified number of times.
 - (C) Sends a ping without revealing the source IP address.
 - (D) Sends ping requests to multiple destinations simultaneously.
 - (E) Immediately stops the ping operation.
60. What does the numeric value from a ping result, such as time=32 ms, represent?
- (A) The time taken to send data to the destination and receive a response (Round-Trip Time).
 - (B) The size of the packet sent to the destination.
 - (C) The port number used to send the ping.
 - (D) The TTL (Time To Live) value of the ping packet.
 - (E) The internet speed of the source computer.
61. Which is can be found who PACS access or edit image data?
- (A) Config File
 - (B) IP Security
 - (C) DICOM Header
 - (D) Access Log
 - (E) Configuration Data
62. Which of the following is a method of attaching storage using USB?
- (A) DAS
 - (B) Database

- (C) Broker
 - (D) Backup
 - (E) NAS
63. Which of the following is acquired from American law about personal information management and security?
- (A) DICOM
 - (B) HIPPA
 - (C) IHE
 - (D) HL7
 - (E) XML
64. What is the compression method which original data is reserved?
- (A) Cosine transform coding
 - (B) Run-Length compression
 - (C) Wavelet transform coding
 - (D) Truncation coding
 - (E) Fractal compression
65. Which is the following is NOT able to make 3D image in modality?
- (A) Ultrasound
 - (B) Computed radiography(CR)
 - (C) Computed tomography(CT)
 - (D) Magnetic resonance imaging(MRI)
 - (E) Positron emission tomography (PET)
66. Which of the following is a proper term which is the standard for interchange text from the different equipment?
- (A) IHE
 - (B) HIPPA
 - (C) HL7
 - (D) RIS
 - (E) HIS
67. What is the process of converting data from an imaging modality acquired B into A or C?



- (A) SSD(Shaded Surface Display)
- (B) VRT(Volume Rendering Technique)
- (C) Virtual endoscopy
- (D) MPR(Multi Planner Reformat)
- (E) Iterative reconstruction (IR)

68. What is the name of the test pattern shown below?



- (A) TG18-LN
- (B) TG18-CT
- (C) TG18-BN
- (D) TG18-CX

(E) TG18-AD

69. What item is an explanation of the process shown in the image below?

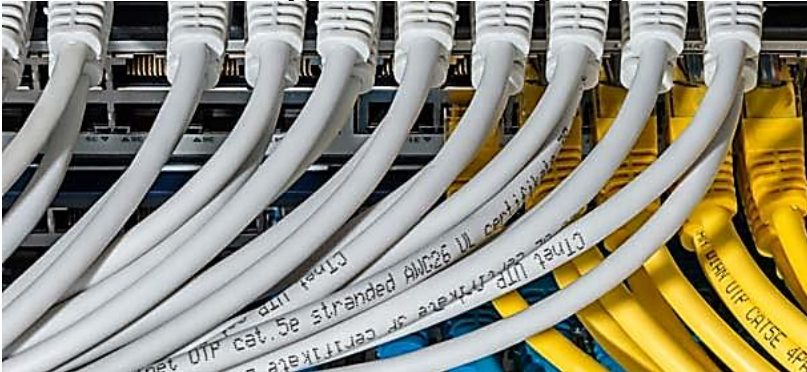


- (A) Distortion calibration
- (B) Gray scale checking
- (C) Monitor contrast checking
- (D) Luminance calibration
- (E) Ambient light checking

70. Which of the following wireless LAN standards has the maximum theoretical transmission speed?

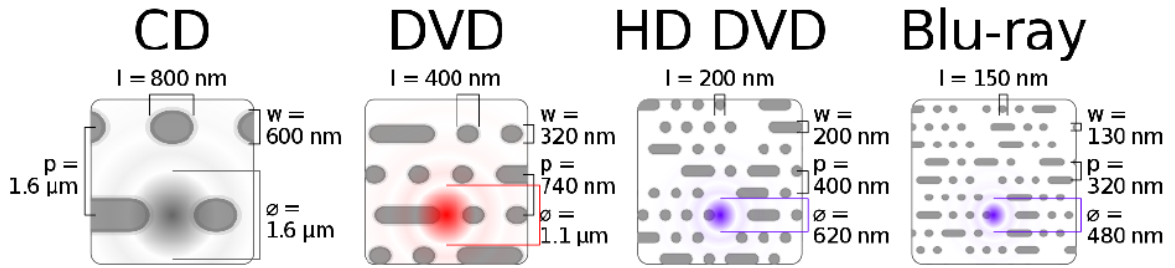
- (A) IEEE802.11a
- (B) IEEE802.11b
- (C) IEEE802.11ac
- (D) IEEE802.11n
- (E) IEEE802.11g

71. What is the cable type in this following image?



- (A) UTP cable
- (B) STP cable
- (C) Fiber optic cable
- (D) Coaxial cable
- (E) RJ45 cable

72. What item is incorrect describing the flowing image?

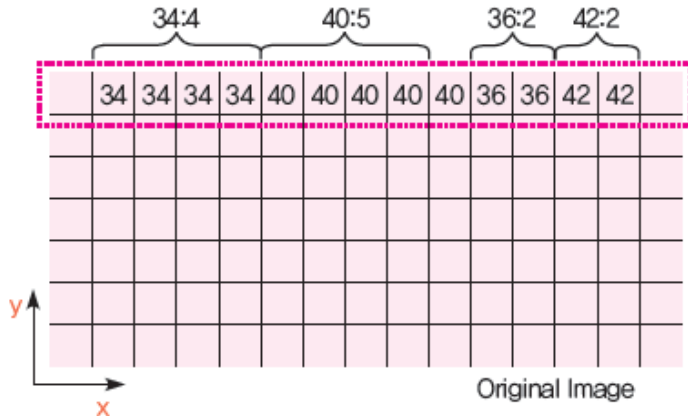


- (A) the CD has highest storage density
- (B) the Blu-ray use the shortest laser wavelength for reading
- (C) DVD has greater storage density than the CD
- (D) the Blu-ray has highest storage density
- (E) the DVD use the shorter laser wavelength than CD for reading

73. Which of the following is a correct flow of data in PACS?

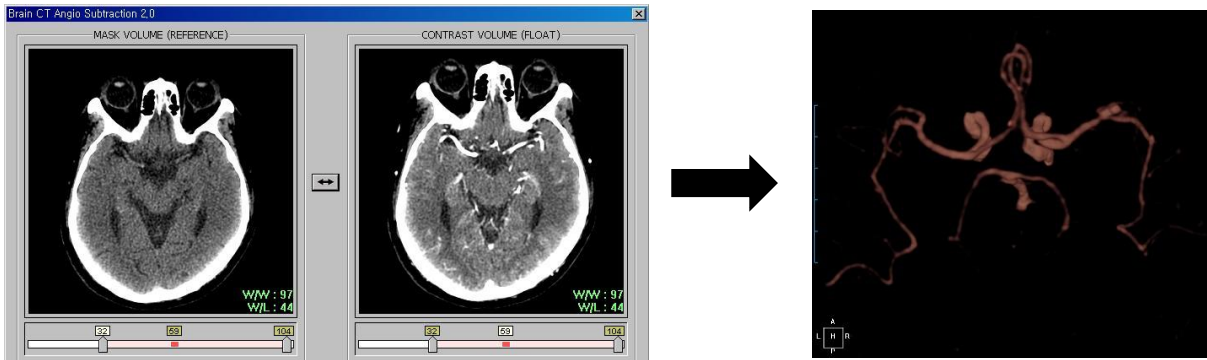
- (1) Modality (2) Disk array (RAID) (3) Server (4) Backbone
- (A) (1) → (2) → (3) → (4)
- (B) (1) → (3) → (2) → (4)
- (C) (1) → (4) → (3) → (2)
- (D) (1) → (3) → (4) → (2)
- (E) (3) → (1) → (4) → (2)

74. Which of the following is the correct explanation of compression method of image?

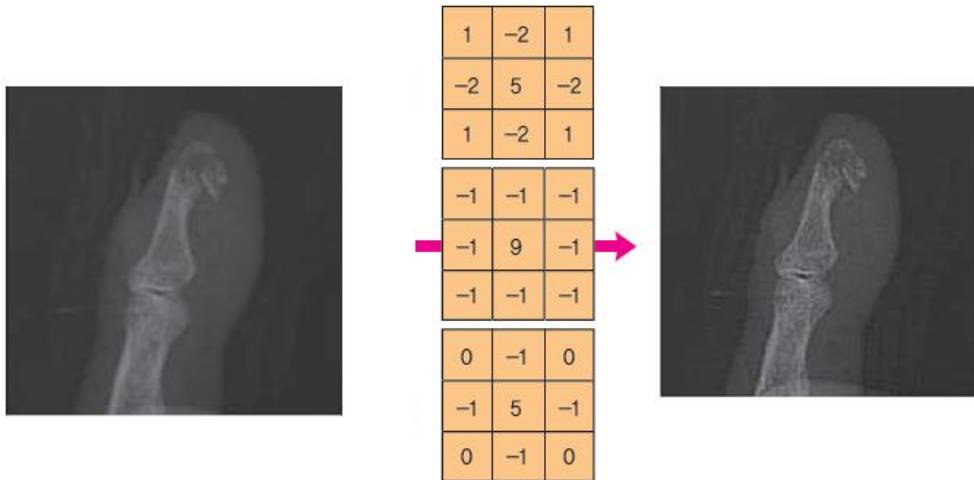


- (A) It is the lossless compression as the simplest method
- (B) The effect get less when it has bigger
- (C) The effect is far better in Radiology
- (D) The block of repeated pixel express the repeat times of factor and that factor
- (E) It is shown low compression ratio in images, cartoons and graphics made by computer.

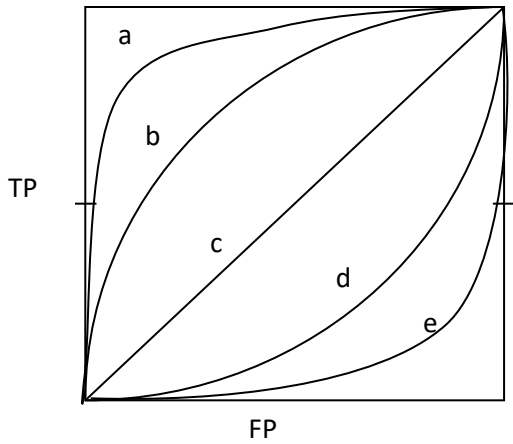
75. Which of the following is the correct explanation blow image?



- (A) The MRA image which is reconstructed image by using to check rate of blood flow
 - (B) Cerebral vascular image by using the 3-dimentional image in Intervention
 - (C) CT image of cerebral vascular which made by subtraction Pre & Post contrast CT scan
 - (D) Cerebral vascular image by using doppler
 - (E) CT image of cerebral vascular which made by a false endoscopy
75. It makes the image of space clearly when it is in rather cloudy, but over-stressing high frequency also can increase the noise. What is this method?



- (A) Low Pass Filter
 - (B) High Pass Filter
 - (C) Edge Detection Filter
 - (D) Arithmetic operation
 - (E) Windowing
76. Which of the following ROC curves is the largest in sensitivity and peculiarity?

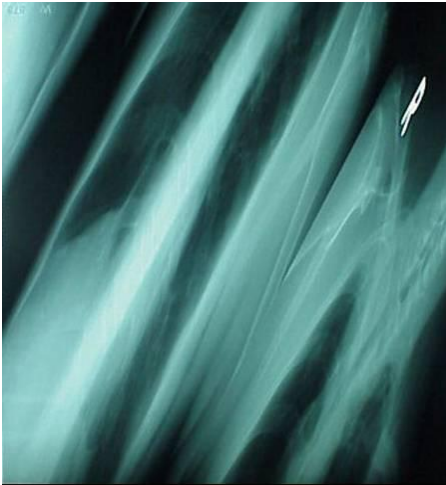


- (A) a
- (B) b
- (C) c
- (D) d
- (E) e

77. Which of the following is the most appropriate reading-monitor for Mammography?

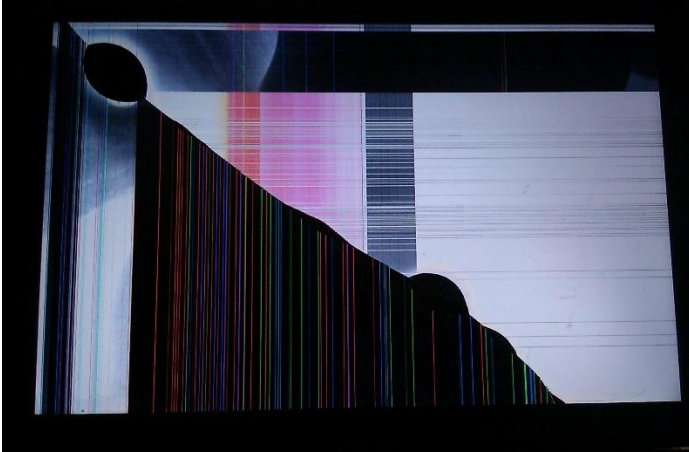
- (A) General Monitor
- (B) 1K Monitor
- (C) 2K Monitor
- (D) 3K Monitor
- (E) 4K Monitor

78. What is the cause of the error in this image?



- (A) CR Error
- (B) IP Scratch Error
- (C) Compression Error
- (D) DB Connect Error
- (E) Bit collapse

79. What is likely the cause of this LCD display malfunction?



- (A) CR error
- (B) IP error
- (C) Compression error
- (D) Cracked Screen
- (E) Scanline error

80. What command in Windows give the result simila to the provided picture below?

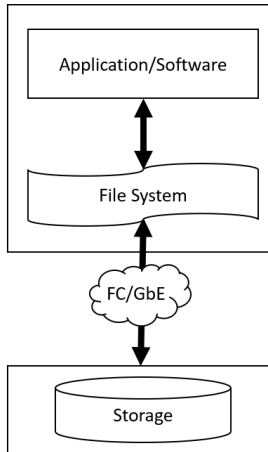
```
Pinging 10.4.2.200 with 32 bytes of data:  
Reply from 10.4.2.200: bytes=32 time=1ms TTL=255  
Reply from 10.4.2.200: bytes=32 time<1ms TTL=255  
Reply from 10.4.2.200: bytes=32 time=2ms TTL=255  
Reply from 10.4.2.200: bytes=32 time=1ms TTL=255  
  
Ping statistics for 10.4.2.200:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 0ms, Maximum = 2ms, Average = 1ms  
  
C:\Users\usera>
```

- (A) Ping 10.4.2.200 -l 255
- (B) Ping 10.4.2.200 -t
- (C) Ping 10.4.2.200 -f
- (D) Ping 10.4.2.200 -t 32
- (E) Ping 10.4.2.200

81. A malicious program whose aim is to replicate itself to spread to other computers through networks and has a strong reproductive ability. What virus type is it?

- (A) Trojan horses
- (B) Worms
- (C) Macro
- (D) Mutation
- (E) Artificial Intelligence

82. Which of the following is the correct explanation blow?



- (A) DAS
- (B) NAS
- (C) SCU
- (D) NFS
- (E) SAN

83. From the OSI model, IP address is represented in which layer?

- (A) Physical layer
- (B) Session layer
- (C) Datalink layer
- (D) Application layer
- (E) Network layer

84. From the following image, which item is correct?



- (A) DICOM header
- (B) DICOM tag
- (C) DICOM Transfer Syntax UID
- (D) HL7 Message v2
- (E) IHE Radiology Profile

85. Which of the following is to be able to exchange between HIS and PACS?

- (A) ACQ Server
- (B) Broker
- (C) DB Server
- (D) Gateway
- (E) HUB

86. Which of the following is related with Modulation Transfer Function(MTF) in high frequency?
- (A) Contrast resolution
 - (B) Image noise
 - (C) Image linearity
 - (D) Image uniformity
 - (E) Spatial resolution
87. Which of the following is the most suitable method to check image quality for contrast and noise?
- (A) DQE (Detective Quantum Efficiency)
 - (B) MTF (Modulation Transfer Function)
 - (C) Resolution
 - (D) Capture Graphic Card
 - (E) SNR (Signal to Noise Ratio)
88. What is the number of bit difference between the IPv4 (Internet Protocol version 4) and the IPv6 (Internet Protocol version 6)
- (A) 8bits
 - (B) 16 bits
 - (C) 24 bits
 - (D) 64 bits
 - (E) 96 bits
89. Which of the following is to express altogether Image compression and restoration hardware ?
- (A) Codec
 - (B) Endencoding
 - (C) Decoder
 - (D) Encoder
 - (E) Compressor
90. Which of the following is CORRECT when the quantization bit rate is changed from 9 bit to 8 bit?
- (A) The volume of image data decreases to 75%
 - (B) The volume of image data decreases to 50%
 - (C) The volume of image data decreases to 25%
 - (D) The volume of image data decreases to 15%
 - (E) The volume of image data decreases to 5%