

# Computer Systems Administration

## TE2003

October 27 2010

0900-1300

IDE, Halmstad University

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Grades: Part 1, 75% => 3

Part 2, 75% => 4

Part 3, G => 5

For the grade 4 it is required that you get grade 3,  
for the grade 5 it is required that you get both grade 3 and 4.

### **Allowed tools:**

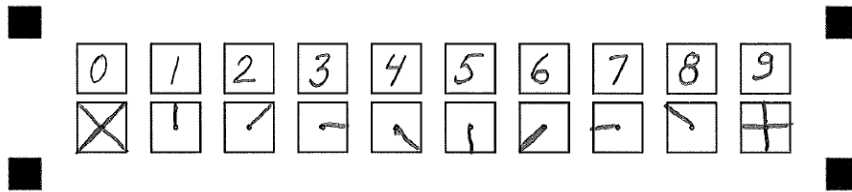
Pencil and eraser.

Tools according to the central regulations.

**Important! Read the instructions on next page carefully before you start!**

## INSTRUCTIONS

Selections is marked with a X in the correct box, from corner to corner. Incorrect marks are erased. Numbers in personal ID and number answers are written as numbers and then coded as follows:



### Please note:

Note down your answers in the questionnaire. When you are finished you transfere the answers to the answer sheets.

All answer sheets must be handed in. The questionnaire is kept or discarded.

Write and code personal ID on every answer sheet. Empty ones too.

Don't forget to code number answers. Empty squares are filled out with zeroes by default.

Examples of filled in forms is available with the exam guard if anything is unclear.

The course responsible will visit the exam approximately 1 hour after start.

**Good luck!**

**PART 1 – GRADE 3 – 75% TO PASS – USE FORM 1 AND 2 TO GIVE ANSWERS**

1. Which of the following interfaces is mainly used for video signals?

- A. VGA
- B. FireWire
- C. USB
- D. eSata

2. How do you "get a prompt"?

- A. Press and hold Windows-P
- B. Start->Run->"cmd"
- C. Press and hold Windows-R
- D. Start->Run->"prompt"

3. What is the main purpose of a pipeline?

- A. Increase the time spent per command.
- B. Increase the number of commands per time unit.
- C. Decrease the time spent per command.
- D. Decrease the number of commands per time unit.

4. What is the first step in a pipeline?

- A. Fetch.
- B. Decode.
- C. Write.
- D. Execute.

5. Random Access Memory means that

- A. the delay for accessing memory cells are constant.
- B. memory cells must be accessed in sequential order.
- C. memory cells can be accessed in random order.
- D. the delay for accessing memory cells are random.

6. What is the memory latency?

- A. The delay of a memory bank.
- B. The width of a memory bank.
- C. The speed of a memory bank.
- D. The capacity of a memory bank.

7. Where is BIOS firmware updates stored?

- A. In CMOS.
- B. In EEPROM.
- C. In ROM.
- D. In RAM.

8. What is POST?

- A. The initial stage of the boot process.
- B. The last stage of the boot process.
- C. Error messages.
- D. Log messages.

9. What expansion port is most recent?

- A. PCI-X
- B. PCIe
- C. ISA
- D. AGP

10. In what order should hardware and drivers be installed?

- A. Driver first, hardware last.
- B. None of the answers.
- C. Hardware first, driver last.
- D. As described in the manual.

11. What is the purpose of driver signing?

- A. To identify the authenticity of the driver.
- B. To validate the integrity of the driver.
- C. To prevent accidental and deliberate misuse.
- D. All of the answers.

12. What does form factor mean?

- A. PCB dimensions.
- B. Connector configuration.
- C. None of the answers.
- D. Chassi dimensions.

13. What voltage does the power supply typically supply?

- A. 3.3 V
- B. All of the answers.
- C. 5 V
- D. 12 V

14. How many magnetic discs are there in the typical SSD drive (=produced after 2005)?

- A. 2
- B. 4
- C. 1
- D. 0

15. What is the purpose of RAID 1?

- A. Capacity.
- B. None of the answers.
- C. Redundancy and capacity.
- D. Redundancy.

16. Why not cool harddrives?

- A. Harddrives are supposed to work at a higher temperature.
- B. Fans add magnetic fields.
- C. Fans add sound and noise.
- D. Harddrives are supposed to work at an even temperature.

17. Where is the partition table found?

- A. In the registry.
- B. In the MBR.
- C. In the VBR.
- D. In all of the answers.

18. What is the smallest writeable unit of a harddrive?

- A. A cluster.
- B. A sector.
- C. A vector.
- D. A buster.

19. What is required to be able to boot from USB?

- A. BIOS support only.
- B. It is not possible to boot from USB.
- C. BIOS support and a bootable USB device.
- D. A bootable USB device only.

20. To be able to use your newly installed Windows you have to:

- A. None of the answers.
- B. Activate.
- C. Register and activate.
- D. Register.

21. How do you remove an empty folder C:\test?

- A. C:\test del /r
- B. del /r C:\test
- C. rd C:\test
- D. C:\test rd

22. What is bit locker?

- A. A encryption suite.
- B. A compression tool.
- C. A torrent client.
- D. A backup tool.

23. A KVM-switch makes it possible to:

- A. Attach one computer to two networks.
- B. Attach two computers to one network.
- C. Attach one mouse to two computers.
- D. Attach two mice to one computer.

24. The LCD is extremely dark. You can barely spot moving objects. The most likely problem is:

- A. no signal.
- B. damaged back light.
- C. broken lcd panel.
- D. no power.

25. The MP3 format is:

- A. a lossy format.
- B. proprietary.
- C. compressing data.
- D. all of the answers.

26. The ozone filter in a laser printer has the purpose to:

- A. Protect humans.
- B. Protect sensitive parts of the printer.
- C. Protect the environment.
- D. All of the answers.

27. You are having problems with the speed of the network. When you look at the switch you notice that for each cable connected to the switch there is a little blinking light. For some of the cables this light is green and for some it is yellow. What does this indicate?

- A. That the links are communicating at different speed.
- B. That the link latency is lower.
- C. That the link latency is higher.
- D. There is no functional difference. The lights just indicate different physical ports.

28. When you issue a ping to a host and get a number back, such as 11ms, you can tell that:

- A. there is a link to the target
- B. there is a link to the target system and that the target system is alive.
- C. the target system is alive.
- D. none of the answers.

29. Level 1 in OSI is:

- A. the transport level.
- B. the application level.
- C. the traffic level.
- D. the physical level.

30. SSID is:

- A. a network protocol.
- B. an unique storage identifier.
- C. a storage (disk) with no moving parts.
- D. the "name" of a wireless networks accesspoint.

31. When a user tries to logon to the system this can be seen in the event viewer:

- A. in the security log.
- B. in the systems log.
- C. in the application log.
- D. in the logon log.

32. Which technique allows modern CPU's to conserve power or/and avoid overheating?

- A. Dual Core
- B. Clock-multiplying CPU
- C. CPU throttling
- D. Wait state

33. A simple pipeline splits the processing of an instruction into at least four steps or stages in the following order

- A. Decode, fetch, write, and execute.
- B. Decode, fetch, execute, and write.
- C. Fetch, decode, write, and execute.
- D. Decode, execute, fetch, and write.

34. In serial bus architectures, bits are sent sequentially, one at a time, over a single channel. Which option contains just examples of serial bus architectures?

- A. USB, PATA, SATA, and eSATA
- B. RS-232, USB, PATA, and PCI-E
- C. USB, FireWire, SATA, and PCI-E
- D. RS-232, SATA, PATA, and PCI-E

35. What is the smallest storage unit for a file on a hard disk drive?

- A. Cylinder.
- B. Track.
- C. Sector.
- D. Cluster.

36. Which of the following statements about RAM is incorrect?

- A. DRAM is used for L1, L2, and L3 cache.
- B. Parity and ECC are methods for error checking in RAM.
- C. SRAM does not need periodic refresh.
- D. DRAM needs periodic refresh.

37. How can you tell if an electro static discharge damaged your component?

- A. You hear a sound.
- B. You feel the discharge.
- C. You see a flash.
- D. None of the alternatives.

38. \_\_\_\_\_ is something you can kick.

- A. Software
- B. Hardware
- C. A driver
- D. An operating system

39. Which of the following statements about file systems is incorrect?

- A. NTFS support file sizes greater than 4GB.
- B. NTFS is not compatible with systems using old windows versions such as Windows 95, 98, and Me.
- C. NTFS supports user quotas.
- D. a) NTFS supports file compression.

40. Which of the following statements about disk utilities is incorrect?

- A. CHKDSK checks the physical disk for problems.
- B. Disk Defragmenter takes fragmented data and puts it back together, giving free disk space.
- C. FDISK provides disk partitioning functions.
- D. None of the answers.

41. What is a benefit of a slower CPU?

- A. Cooler.
- B. Faster.
- C. Slower.
- D. Hotter.

42. What does excessive disk access most likely indicate?

- A. Excessive RAM capacity.
- B. Insufficient disk space.
- C. Insufficient RAM capacity.
- D. Excessive disk space.

43. Which of the following would prove more damaging to a CD-RW?

- A. Power failure during reading.
- B. Scratching the top.
- C. Scratching the bottom.
- D. Power failure during writing.

44. Where does most USB devices get their power?

- A. USB devices does not need power.
- B. Self powered by DC.
- C. Self powered by AC.
- D. From the USB bus.

45. What is a FRU?

- A. Field Replacable Unit
- B. Failed Removable Unit
- C. Fire Reduction Utility
- D. Free Reigning Usability

46. What technology is used to reduce cost in laptop computers?

- A. Dual video cards.
- B. USB memory.
- C. Shared memory.
- D. Dual processors.

47. A(n) \_\_\_\_\_ is a fix for a single problem in the operating system.

- A. service pack
- B. driver
- C. update
- D. patch



48. The location of a file is called its:

- A. file
- B. path
- C. root
- D. folder

49. After entering IPCONFIG at a command prompt, you notice you are using an IP address in the 169.254.0.1 to 169.254.255.254 address range. What is most likely the reason you were assigned one of these addresses?

- A. The DNS server is down.
- B. IPv4 addresses are not available.
- C. IPv6 addresses are not available.
- D. The DHCP server is down.

50. What is the default subnet mask for Class C addresses?

- A. 255.0.0.0
- B. 255.255.255.0
- C. 255.255.0.0
- D. 255.255.255.255

**PART 2 – GRADE 4 – 75% TO PASS – USE FORM 3 AND 4 TO GIVE ANSWERS**

1. Rank the following 1-4 according to increasing capacity.

- A BlueRay Disc
- B DVD
- C CD
- D Floppy disc

2. Rank the following 1-4 according to increasing file size for 10 seconds of a given song.

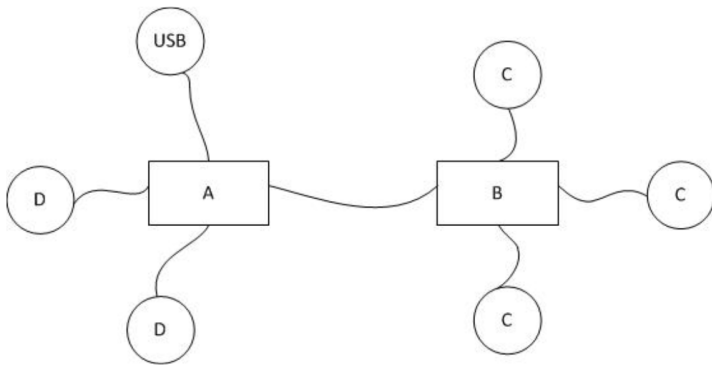
- A MIDI
- B MP3
- C FLAC
- D WAV

3. Rank the following 1-4 in order of increasing security.

- A WPA 2
- B WPA
- C Open network.
- D WEP

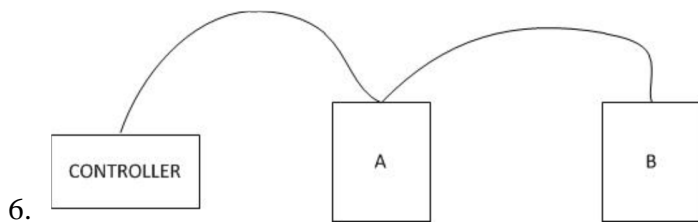
4. Rank the following 1-4 in order of increasing capacity.

- A USB
- B RS-232 serial link
- C Gigabit Ethernet
- D SATA



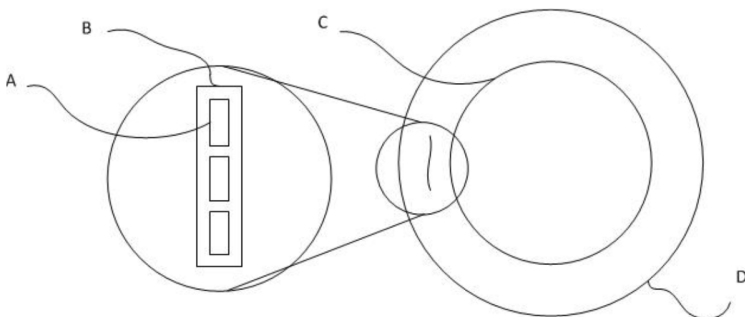
5. Match the labels with the correct titles. To get you started I filled in USB at the right position.

1. AGP
2. CPU
3. South bridge
4. RAM
5. BIOS
6. North bridge
7. PCI



6. This is a PATA controller with two discs. Set the jumpers correctly.

1. Slave
2. Master

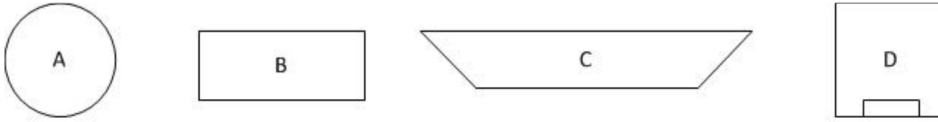


7. Match the following artifacts.

1. Disc
2. Cluster
3. Sector
4. Track

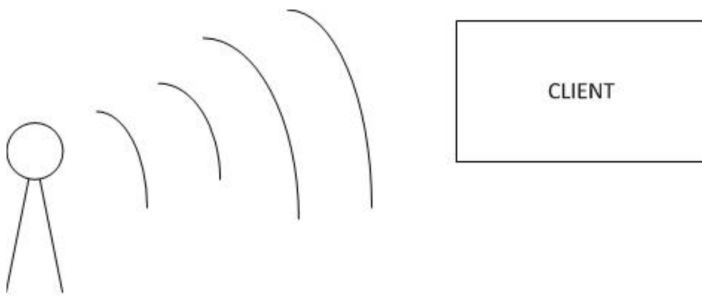
8. Rank the following 1-4 in order of increasing heat dissipation.

- A CPU
- B North bridge
- C South bridge
- D USB controller



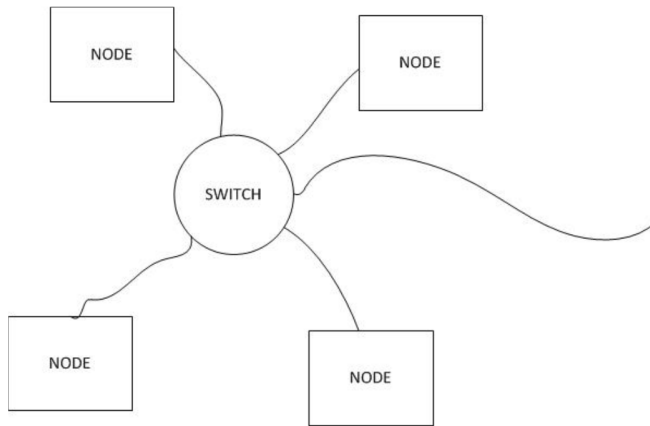
9. Match the connectors with the correct label.

- 1. P/S 2
- 2. RJ45
- 3. DSUB
- 4. USB



10. AP  
This is:

- A. an Infrastructure network.
- B. an Ad-Hoc network.



11.

This is:

- A. a ring topology.
- B. a mesh topology.
- C. a bus topology.
- D. a star topology.

12. The maximum amount of memory you can fully use in a 32-bit OS of the given alternatives is:

- A. 4 GB
- B. 2 GB
- C. 5 GB
- D. 3 GB

13. Approximately how long will it take to download 800 MB using a 8 MBit/s connection at full speed?

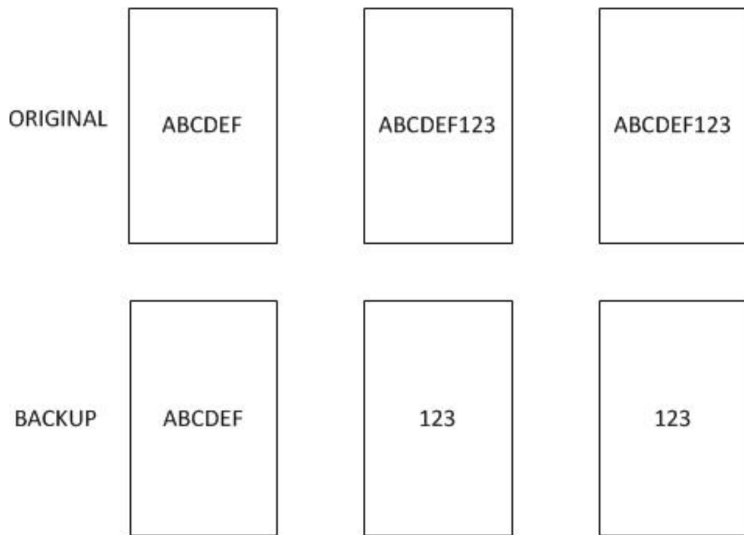
- A. 5 minutes
- B. 90 minutes
- C. 45 minutes
- D. 15 minutes

14. The following is taken from ipconfig /all:

Y: 00-50-56-C0-00-01  
 X: No  
 ?: 192.168.244.1  
 ?: 255.255.255.0

X is "DHCP is enabled", what is Y?

- A. Default gateway
- B. IP-adress
- C. IP-subnet
- D. MAC-adress



15.

The illustration shows:

- A. Recursive backup.
- B. Incremental backup.
- C. Differential backup.
- D. Full backup.

16. Rank the following 1-4 in order of increasing number of maximum nodes.

- A SATA
- B SCSI SPI
- C USB
- D PATA

### **PART 3 – GRADE 5 – USE FORM 5 TO GIVE ANSWER**

**REQUIREMENTS: TO GET THE GRADE 5 YOU MUST BE ABLE TO SHOW A DEEP UNDERSTANDING OF THE SUBJECT AND BE ABLE TO DISCUSS AND ARGUE AROUND THE TOPIC USING THE CORRECT TERMS AND CORRECT JUDGEMENT. IN OTHER WORDS: BEING CORRECT IS NOT ENOUGH TO PASS THIS PART – YOU ALSO HAVE TO CONVINCE THAT YOU POSSESS A DEEP UNDERSTANDING OF THE SUBJECT.**

**Instructions: Pick one of the topics below and write a relevant statement of no more than 1120 characters, white space included, one character in each square. Write a sketch first, then transfeere it to the answer sheet.**

1. The benefits and drawbacks of pipelining.
2. Computer systems trouble shooting.
3. Network problems.
4. Authentication and access.
5. The benefits and drawbacks of cacheing.
6. Optical disc storage.
7. The installation process.
8. Computer systems security.
9. Magnetical disc storage.
10. Portable vs. stationary computers.