

HSC Exam

Multiple choice

1. Which layer is the TCP protocol located in?
 - a. Session
 - b. Transport
 - c. Network
 - d. Data link
2. What is an attribute?
 - a. Record
 - b. Tuple
 - c. Field
 - d. Row
3. Which method is the most suitable for developing a website?
 - a. Traditional
 - b. Agile methods
 - c. Participant Development
 - d. Customisation
4. Which one is an example of batch processing?
 - a. Processing a cheque
 - b. Transferring money on a bank website
 - c. Buying shares
 - d. Purchasing items on eBay
5. Which format for image compression uses lossy?
 - a. JPEG
 - b. PNG
 - c. GIF
 - d. BMP
6. What is the first stage of the Tuckman team building method?
 - a. Forming
 - b. Storming
 - c. Norming
 - d. Performing
7. Which network connection device simply amplifies and retransmits packets to all attached nodes?
 - a. Hub
 - b. Repeater
 - c. Switch
 - d. Bridge
8. What is level-0 RAID?
 - a. Stripping
 - b. Mirroring
 - c. Fragmentation

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- d. Striping
9. What data type is an approximate fractional number?
 - a. Boolean/bit
 - b. Integer
 - c. Real/float
 - d. Fixed point
 10. What does ACID stand for?
 - a. Analytical Case of Independent Disks
 - b. Analysis Communication Integrity Data
 - c. Atomicity Consistency Isolation Durability
 - d. Application Communication Internet Database
 11. If an ATM is located inside a shopping centre, which type of connection would it use?
 - a. Dedicated phone line
 - b. Dial-up modem
 - c. Ethernet
 - d. Coaxial cable
 12. What does OLAP stand for?
 - a. Online Application Program
 - b. Online Analytical Processing
 - c. Online Analysis Performance
 - d. Online Application Performance
 13. Which layer of the OSI Model is SONET located in?
 - a. Session
 - b. Transport
 - c. Data link
 - d. Network
 14. Which transmission media has the largest bandwidth?
 - a. Ethernet cable
 - b. Coaxial cable
 - c. Optical fibre cable
 - d. Twisted Pair
 15. Which topology will fail if the central hub is broken?
 - a. Bus
 - b. Star
 - c. Ring
 - d. Hybrid
 16. What is the best method for error checking?
 - a. CRC
 - b. Parity Bit Check
 - c. Check Sum
 - d. Hamming Distance Based Check
 17. Which of the following is not a project management tool?
 - a. Gantt chart
 - b. Funding Management Plan
 - c. Storyboard
 - d. Communication Plan
 18. What is incremental back-up?
 - a. Complete copies of all data within the system

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- b. Partial files that copy all files that have been changed since the last back-up
 - c. Partial back-ups to make copies of all files that have been changed since the last full back-up
 - d. Selecting which files to back-up
19. Which of the following is a DSS technique used to discover hidden patterns and relationships?
- a. OLAP
 - b. OLTP
 - c. Data mining
 - d. SQL
20. Which of the following protocols is most widely used for LAN?
- a. Ethernet
 - b. Token ring
 - c. SONET
 - d. FDDI

Question 21

Baker's Delight and Bread Top are merging to become Bread Delight. Bread Top currently has a manual database and is planning to merge into Baker's Delight computerised database. This is the data dictionary for the **Employee Table**:

Field Name	Data Type	Data Size
Employee ID	Number	8
Surname	Text	25
First name	Text	25
Mobile number	Text	10
Home number	Text	10
Address	Text	30
Branch	Text	15

- Suggest and justify a suitable conversion method for the merging of the two databases. **2**
- Design a data dictionary for a **Branch Table**. **2**
- Draw a schema to show the design of the new relational database. Show field names and identify key fields. **3**
- Write an SQL Command that searches for all the employees on one branch with last names starting from A to L. **3**

Question 22

Irene received this email:

DEAR VALUED CUSTROMER,

Commonwealth Bank is currently updating our client database. We need to update all customer information. Please click on the following link and enter your personal details.

Thank u for your time.

Commonwealth Bank Management Team.

- Identify a social or ethical issue present in this scenario. **1**
- What is the process for sending this email from the sender's email account to Irene's inbox? **4**
- What are trace fields and how could they be used in this scenario. **2**

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- d) Identify and describe network connection devices that are needed to access the Internet and send e-mails. **3**

Question 23

Project management

North Sydney Girls High School is planning to publish a school magazine at the end of the year. The Magazine Committee must compile photos, graphics and articles. Each member is assigned a specific role and must perform these roles at school and at home. They must arrange regular meetings to discuss and update their information.

- a) What information technology will be required for this project? **3**
- b) Identify and describe the information processes that are involved in this task. **3**
- c) What project management tools would you recommend that they use during the duration of this project? **2**
- d) What are the benefits of effective teamwork? **2**

Question 24

MyStore is designing a new system which offers cosmetic products for low and affordable prices. They have not decided on what type of transaction processing system to use yet.

- a) Which transaction processing system would you recommend and what are their benefits and disadvantages. **3**
- b) What hardware and software will be used to create and maintain this Transaction Processing System. **2**
- c) Who are the participants and what is the data/information in this system. **3**
- d) What data integrity methods should be used to ensure the accuracy of data? **2**

Question 25

Exam 1 Questions

- a)
- i. Define bit depth and describe how it is used in images. **2**
 - ii. Compare and contrast TWO compression methods for images. **2**

Use the following information to answer part b) - c).

Company X is a commercial law firm which has branches in Sydney, Melbourne, Brisbane and Adelaide. They want to create a website with information about their history, their services, and their contact details. The history page must show images of their company. The services page must include the following service areas: banking & finance, commercial property and tax. The contact page must show the contact details of all of their branches.

- b) Draw a story board showing good design principles. Clearly label the major elements for each page. **3**
- c) Company X wants to put an image that has a resolution of 600 X 400 pixels and displays 256 colours. Demonstrate how to calculate the size of this image in kilobytes. Explain what each number in the calculation represents. Do NOT calculate the answer. **3**

Exam 1 Questions

Core Topics x4 [long response]

- Communication System
- Information and Database System
- Project Management System
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Optional Topics x 2 [long response]

- Transaction Processing System
- Multimedia System

Structure

Marks

Answer Sheet

Timing