1. Number of bits in a kilobyte:

8000 bits

2. You have 100 image files, each taking up 200 KB. How much space do they take up overall (include the units in your answer):

100 \* 200 / 1024 = 19.5312 MB

3. What is HTML used for?

HTML is the computer language that is used to structure a web page and its content.

4. Give an example of encryption algorithm

RSA

5. What is virtual memory? What is paging? (2 marks)

– Virtual memory

Virtual memory is a feature of an operating system that enables a computer to be able to compensate for shortages of physical memory. When RAM runs low, virtual memory can move data from it to a space called a paging file. This process allows for RAM to be freed up so that a computer can complete the task.

– Paging

Paging is a memory management scheme by which a computer stores and retrieves data from a hard disk for use in RAM. In this scheme, the operating system retrieves data from the hard disk in same-size blocks called pages.

6. Give an example of secondary memory.

SSD

7. What is lossy compression? What is lossless compression? Give examples. (4 marks)

– Lossy compression is a compression method that eliminate the data which is not noticeable to reduce file size. Suitable when content’s size is prioritised over its quality. Example: MP3, JPEG.

– Lossless compression is a compression method that retain original data. Suitable when content’s quality is prioritised over its size. Example: FLAC, DNG.

8. A table Employee has the following fields: ID, name, title, salary.

Write a SQL query to return the average salary for all employee whose title is equal to 'Programmer'. (5 marks)

SELECT AVG(salary)

FROM Employee

WHERE title = ‘Programmer’

GROUP BY ID;

9. Convert decimal 23 to a binary. Choose one answer:

a. 1001 b. 11110 c.10110 d. 10111

10. Convert binary 100100 to a decimal. Choose one answer.

a. 24 b. 36 c. 48 d. 42

11. The first step in designing a new database is

A. Entering data

B. Building queries

C. Planning the tables

D. Printing reports

12. You can add a row using SQL in a database with which of the following?

A. ADD

B. CREATE

C. INSERT

D. MAKE

13. The SQL WHERE clause:

A. limits the column data that are returned.

B. limits the row data are returned.

C. Both A and B are correct.

D. Neither A nor B are correct.

14. The SQL keyword(s) \_\_\_\_\_\_\_\_ is used with wildcards.

A. LIKE only

B. IN only

C. NOT IN only

D. IN and NOT IN

15. The result of a SQL SELECT statement is a(n) \_\_\_\_\_\_\_\_ .

A. report

B. form

C. file

D. table

16. To remove duplicate rows from the results of an SQL SELECT statement, the \_\_\_\_\_\_\_\_ qualifier specified must be included.

A. ONLY

B. UNIQUE

C. DISTINCT

D. SINGLE

17. Find the SQL statement below that is equal to the following: SELECT NAME FROM CUSTOMER WHERE STATE = 'VA';

A. SELECT NAME IN CUSTOMER WHERE STATE IN ('VA');

B. SELECT NAME IN CUSTOMER WHERE STATE = 'VA';

C. SELECT NAME IN CUSTOMER WHERE STATE = 'V';

D. SELECT NAME FROM CUSTOMER WHERE STATE IN ('VA');

18. The SQL statement that queries or reads data from a table is \_\_\_\_\_\_\_\_ .

A. SELECT

B. READ

C. QUERY

D. All of the above

19. Which of the following best describes a phishing attack?

(a) Try to obtain the password by breaking into the victims house and looking for it written down

somewhere.

(b) Try to obtain the password by tricking the victim into logging in to a fake but realistic looking web site.

(c) Try to figure out the password by intercepting the packets of the login network transaction.

(d) Try to figure out the password by continuously attempting to login with password guesses.

20. C is a programming language.

(a) True

(b) False

21. Which one of the following is not a prime number?

A. 31

B. 61

C. 71

D. 91

22. If a and b are odd numbers, then which of the following is even?

A. a+b-1

B. a+b+1

C. ab

D. ab+2

E. None of these

23. Suppose we have a binary number, what happens if we put 0 at the end; i.e. to the right of that number? (Hint: Compare 1 and 10, 10 and 100, 11 and 110. Can you see the rule or pattern here?) (5 marks)

The new number will be the multiplication by 2 of the previous number when convert to decimal

24. Sum of 2 prime numbers is a prime number; i.e. prime number + prime number = prime number

a. True

b. False

29. (a) 2 is a prime number? (Yes/No) Yes

(b) The product of 2 prime number is always odd; i.e. prime number \* prime number = odd number? (Yes / No) No

25. How many bits are required to represent number 256?

9 bits