**11.1 Introduction**

11.1 \_\_\_\_\_\_\_\_ are used for permanent retention of large amounts of data.

(a) Structures

(b) Arrays

(c) Records

(d) Files

ANS: (d)

11.2 Which of the following is *false*?

a) Storage of data in memory variables is temporary; all such data is lost when a program terminates.

b) Computers store files on primary storage devices, typically disk storage devices.

c) Files are used for permanent retention of data (typically large amounts of data).

d) Storage of data in memory arrays is temporary; all such data is lost when a program terminates.

ANS: (b)

**11.2 Files and Streams**

11.3 Which of the following is *not* a stream associated with C files?

(a) stdin

(b) stdout

(c) stdchar

(d) stderr

ANS: (c)

11.4 Which of the following is *not* part of the FILE structure specified in <stdio.h>?

(a) file descriptor

(b) open file table

(c) read/write methods

(d) file control block

ANS: (c)

11.5 C views each file simply as a sequential stream of \_\_\_\_\_\_\_\_\_\_.

a) bits

b) bytes

c) fields

d) records

ANS: (b)

11.6 Which of the following is *not* automatically opened when a C program begins?

a) standard error

b) standard output

c) standard dialog

d) standard input

ANS: (c)

11.7 \_\_\_\_\_\_\_\_\_\_ provide communication channels between files and programs.

a) Streams

b) Records

c) File descriptors

d) File control blocks (FCBs)

ANS: (a)

11.8 The standard \_\_\_\_\_\_\_\_\_\_ stream enables a program to read data from the keyboard.

a) read

b) keyboard

c) dialog

d) input

ANS: (d)

11.9 Function \_\_\_\_\_\_\_\_\_\_ reads one character from a file.

a) fgetcharacter

b) fgetc

c) fgetchar

d) fgetbyte

ANS: (b)

11.10 Function fputs writes a \_\_\_\_\_\_\_\_\_\_ to a file.

a) character

b) stream

c) line

d) standard output

ANS: (c)

**11.3 Creating a Sequential-Access File**

11.11 Which mode would you use if you wanted to open a file for *both* reading and writing?

(a) r+

(b) w+

(c) a+

(d) all of these

ANS: (d)

11.12 If an error occurs while opening a file in any mode, function fopen returns \_\_\_\_\_\_\_\_.

(a) true

(b) NULL

(c) false

(d) -1

ANS: (b)

11.13 Which statement is *true*?

a) C imposes no structure on a file.

b) C imposes record structure on a file.

c) C imposes sequential access on a file.

d) C imposes hierarchical access on a file.

ANS: (a)

11.14 Which statement is *false*?

a) The programmer must provide any file structure to meet the requirements of each particular application.

b) A programmer can impose a record structure on a file.

c) Records must be written to a C file in order by record key.

d) The notion of a record of a file does not exist in C.

ANS: (c)

11.15 Which of the following statements is *false*?

a) The programmer must know the specifics of the FILE structure to use files.

b) The FILE structure for a file leads indirectly to the operating system’s file control block (FCB) for a file.

c) If a file does not exist and is opened for writing fopen creates the file.

d) A C program administers each file with a separate FILE structure.

ANS: (a)

11.16 Before a file can be accessed it must first be

a) copied

b) read

c) written

d) opened

ANS: (d)

11.17 If an existing file is opened for writing \_\_\_\_\_\_\_\_\_\_.

a) the contents of the file are preserved

b) the contents of the file are discarded and an error code is returned

c) the contents of the file are discarded without warning

d) the newly written data is appended to the end of the file

ANS: (c)

11.18 Function feof \_\_\_\_\_\_\_\_\_\_.

a) forces an end-of-file condition

b) determines whether the end-of-file indicator is set for a file

c) sets the end-of-file indicator for a file

d) flushes the contents of the file from the current position to the end

ANS: (b)

11.19 Which statement is *true*?

a) Function fprintf is equivalent to printf.

b) Function fprintf is equivalent to printf except that fprintf also receives as an argument a file pointer for the file to which the data will be written.

c) Function fprintf is equivalent to printf except that fprintf also receives as an argument a file control block for the file to which the data will be written.

d) Function fprintf is equivalent to printf except that fprintf also disables the file end-of-file indicator.

ANS: (b)

11.20 If a file is *not* closed explicitly by a program \_\_\_\_\_\_\_\_\_\_.

a) the operating system normally will close the file when program execution terminates

b) the file will be left open when the program terminates, creating a possible security breach

c) the operating system will query the user to determine if he or she wishes to close the file when the program terminates

d) the operating system will not allow the owner of that program to run any other programs

ANS: (a)

11.21 Which statement is *false*?

a) Each file used in a program must have a unique name and will have a different file pointer returned by fopen.

b) All subsequent file processing functions after the file is opened must refer to the file with the appropriate file control block.

c) To create a file use file open mode “w”.

d) To add records to an existing file, pen the file for appending (“a”).

ANS: (b)

11.22 If an error occurs while opening a file in any mode, fopen \_\_\_\_\_\_\_\_\_\_.

a) causes program termination

b) returns NULL

c) issues the message “can’t open file”

d) diagnoses the error, waits five minutes and retries

Ans: (b)

11.23 Which statement is *true*?

a) fopen returns a FILE structure.

b) fopen returns a pointer to a FILE structure.

c) fopen returns a file control block (FCB).

d) fopen returns a pointer to a file control block (FCB).

ANS: (b)

**11.4 Reading Data from a Sequential-Access File**

11.24 Function fscanf takes an argument of type \_\_\_\_\_\_\_\_.

(a) FILE pointer

(b) cfPtr

(c) char

(d) int

ANS: (a)

11.25 Which of the following is a function that causes a program’s file position pointer to be repositioned to the beginning of the file?

(a) rescan

(b) rewind

(c) return

(d) none of these

ANS: (b)

11.26 Function fscanf is equivalent to function scanf, except that fscanf

a) can have only a single argument.

b) can read only from standard streams.

c) can read only from open streams.

d) receives as an argument a file pointer for the file from which the data is read.

ANS: (d)

11.27 The rewind statement causes \_\_\_\_\_\_\_\_\_\_.

a) the disk to stop spinning, then spin in reverse until it repositions to the beginning of the file.

b) the contents of the file to be erased.

c) a program’s file position pointer to be repositioned to the beginning of the file (i.e., byte 0).

d) a file to be closed and then re-opened.

ANS: (c)

11.28 Which statement is *true*?

a) The file position pointer is a pointer to a FILE structure.

b) The file position pointer is a pointer to an FCB.

c) The file position pointer is not really a pointer.

d) The file position pointer specifies the file reset.

ANS: (c)

**11.5 Random-Access Files**

11.29 Individual records of a randomly accessed file are normally \_\_\_\_\_\_\_\_.

(a) fixed in length

(b) not fixed in length

(c) sorted by record key

(d) read using the fopen function

ANS: (a)

11.30 Which of the following is *false*?

(a) Data can be inserted in a randomly accessed file without destroying other data in the file.

(b) There is more than one way to implement randomly accessed files.

(c) Randomly accessed files cannot be accessed directly without searching through other records.

(d) Data stored previously can be updated or deleted without rewriting the entire file.

ANS: (c)

11.31 Which statement is *false*?

a) Randomly accessed files are popular in transaction processing systems.

b) Data stored previously in a randomly accessed file can be updated or deleted without rewriting the entire file.

c) Records of a randomly accessed file are normally fixed in length (i.e., all the record in the file are the same length).

d) A record of a randomly accessed file is normally located by searching the portion of that file which precedes that record.

ANS: (d)

**11.6 Creating a Random-Access File**

11.32 What is the significance of the 1 in the following statement?

fwrite(&number, sizeof(int), 1, fPtr);

(a) It specifies that the file is to be opened for updating.

(b) It specifies the number of elements in the array that should be written to disk.

(c) It specifies the byte size of the element being written to disk

(d) none of these

ANS: (b)

11.33 Function fwrite \_\_\_\_\_\_\_\_\_\_.

a) is equivalent to function fprintf

b) transfers a specified number of bytes beginning at a specified location in memory to a location in a file indicated by the file position pointer

c) transfers a specified number of bytes beginning at a specified location in memory to a location in a file indicated by one of its arguments

d) is equivalent to function fprintf, except that fwrite can only write to standard streams

ANS: (b)

11.34 fread and fwrite

a) can not read and write arrays of data

b) process all their data in human readable format

c) process all their data in the same format used by fscanf and fprintf, respectively

d) process all their data in “raw data” format

ANS: (d)

11.35 Which statement is *true*?

a) Random access file-processing programs typically read and write one field at a time.

b) Random access file-processing programs typically read and write one struct at a time.

c) The sizeof operator is a run-time unary operator that returns the size in bytes of its operand.

d) The expression sizeof(int) always returns 4.

ANS: (b)

11.36 sizeof

a) is a compile-time function

b) is a compile-time unary operator

c) is a run-time unary operator

d) is a run-time function

ANS: (b)

**11.7 Writing Data Randomly to a Random-Access File**

11.37 Which of the following is an argument of the fseek function that can have the values SEEK\_SET,

SEEK\_CUR or SEEK\_END?

(a) stream

(b) offset

(c) whence

(d) none of these

ANS: (c)

11.38 Which statement is *true*?

a) fseek searches for a record by its record key.

b) fseek sets the file position pointer to a specific byte location in the file.

c) fseek moves the read-write head on the disk to the location on disk that corresponds to a specific location in a file.

d) fseek must immediately follow each call to fread or fwrite.

ANS: (b)

11.39 The symbolic constant \_\_\_\_\_\_\_\_\_\_ indicates that the file position pointer is to be positioned relative to the beginning of the file by the amount of the offset.

a) SEEK\_SET

b) SEEK\_BEGIN

c) SEEK\_START

d) SEEK\_CUR

ANS: (a)

**11.8 Reading Data from a Random-Access File**

11.40 Which of the following is a function that reads a specified number of bytes from a file into memory?

(a) fseek

(b) fwrite

(c) fread

(d) fopen

ANS: (c)

11.41 Which statement is *true*?

a) fread always reads a record at a time from a file into memory.

b) fread reads a specified number of bytes from a file into memory.

c) Every fread call must include an argument with sizeof.

d) fread reads bytes from a position in the file specified as one of fread’s arguments.

ANS: (b)

**11.9 Case Study: Transaction-Processing Program**

11.42 In the statement

fseek (fPtr, (account – 1) \* sizeof(struct clientData), SEEK\_SET);

why are we adjusting account by –1?

a) Because the account numbers start at 0 and the file starts at position 0.

b) Because the account numbers start at 0 and the file starts at position 1.

c) Because the account numbers start at 1 and the file starts at position 0.

d) Because the account numbers start at 1 and the file starts at position 1.

ANS: (c)

**11.10 Secure C Programming**

11.43 Which of the following statements is true?

(a) Files written in binary format are always portable.

(b) C11’s new exclusive mode allows fopen to open a file only if it does not already exist.

(c) All platforms allow you to open an unlimited number of files.

(d)None of the above

ANS: (b)