Name: ________________________ **Class:** ___________________ **Date:** __________ **ID: A**

CST-186 Chapter 11 Study Guide

True/False

Indicate whether the statement is true or false.

____ 1. A module is a set of packages.

____ 2. `Sprite` is a subclass of `Text`.

____ 3. The dimensions of our graphics screen are measured in pixels.

____ 4. When loading an image for the background of the graphics screen, you should pass `True` to `transparent`.

____ 5. The coordinate pair (0,0) is the location of the pixel in the lower-left corner of the graphics screen.

____ 6. The color of the pixel at the lower-left corner of an image is its transparent color.

____ 7. A sprite must be added to the graphics screen in order for the sprite to be displayed.

____ 8. A `Sprite` object's `right` property can never be less than the object's `left` property.

____ 9. The following line of code makes the mouse pointer visible on the graphics screen:

```
games.mouse.is_visible = False
```

____ 10. If a `Sprite` object's `overlapping_sprites` property is an empty list, no objects overlap the `Sprite` object.

Multiple Choice

Identify the choice that best completes the statement or answers the question.

____ 11. What are two modules from the `livewires` package?

a. `screen and mouse`
b. `screen and keyboard`
c. `games and color`
d. `pygame and color`

____ 12. In the following code, what does `fps` stand for?

```
games.init(screen_width = 640, screen_height = 480, fps = 50)
```

a. `frames per second`
b. `first person shooter`
c. `focal point system`
d. `floating point system`

____ 13. What `screen` method closes the graphics window?

a. `close()`
b. `end()`
c. `quit()`
d. `terminate()`

____ 14. What `screen` method adds a graphics object to the graphics screen?

a. `add()`
b. `append()`
c. `new_sprite()`
d. None of these

____ 15. Given the following code, how many pixels will make up the graphics screen?

```
games.init(screen_width = 100, screen_height = 25, fps = 50)
```

a. 250
b. 400
c. 2500
d. 5000

____ 16. Given the following code, what is the maximum value for an x-coordinate on the visible graphics screen?

```
games.init(screen_width = 640, screen_height = 480, fps = 50)
```

a. 640
b. 639
c. 480
d. 479

____ 17. What coordinate pair identifies a location above and to the right of the location identified by (100, 100) on the graphics screen?

a. (50, 50)
b. (50, 150)
c. (150, 50)
d. (150, 150)

____ 18. When the following code is executed, on what part of the graphics screen will the message "You won!" be displayed?

```
from livewires import games, color

games.init(screen_width = 640, screen_height = 480, fps = 50)

won_message = games.Text(value = "You won!",
                            size = 25,
                            color = color.red,
                            x = games.screen.width/8,
                            y = games.screen.height/8)
games.screen.add(won_message)

games.screen.mainloop()
```

a. upper-left
b. upper-right
c. lower-left
d. lower-right

____ 19. What `Sprite` object property represents the object's position on the graphics screen, from top to bottom?

a. `x`
b. `y`
c. `dx`
d. `dy`

____ 20. What `Sprite` object method is called automatically, every graphics `screen` update?

a. `mainloop()`
b. `destroy()`
c. `sync()`
d. `update()`

____ 21. What `Sprite` object method removes the object from the graphics screen?

a. `remove()`
b. `destroy()`
c. `end()`
d. `kill()`

____ 22. When the following code is executed, for about how many seconds will the message "You won!" be displayed?

```
from livewires import games, color

games.init(screen_width = 640, screen_height = 480, fps = 50)

won_message = games.Message(value = "You won!",
                            size = 100,
                            color = color.red,
                            x = games.screen.width/2,
                            y = games.screen.height/2,
                            lifetime = 2000,
                            after_death = games.screen.quit)
games.screen.add(won_message)

games.screen.mainloop()
```

a. 10
b. 20
c. 30
d. 40

____ 23. When the following code is executed, what will happen after the message "You won!" disappears?

```
from livewires import games, color

games.init(screen_width = 640, screen_height = 480, fps = 50)

won_message = games.Message(value = "You won!",
                            size = 100,
                            color = color.red,
                            x = games.screen.width/2,
                            y = games.screen.height/2,
                            lifetime = 200,
                            after_death = games.screen.quit)
games.screen.add(won_message)

games.screen.mainloop()
```

a. the graphics screen will close
b. the color of the message will change
c. the message will reappear
d. None of these

____ 24. When the following code is executed, what will happen after the message "You won!" disappears?

```
from livewires import games, color

games.init(screen_width = 640, screen_height = 480, fps = 50)

won_message = games.Message(value = "You won!",
                            size = 100,
                            color = color.red,
                            x = games.screen.width/2,
                            y = games.screen.height/2,
                            lifetime = 200)
games.screen.add(won_message)

games.screen.mainloop()
```

a. the graphics screen will close
b. the color of the message will change
c. the message will reappear several seconds later
d. None of these

____ 25. When the following program is executed, in what direction will the `Sprite` object move on the graphics screen?

```
from livewires import games

games.init(screen_width = 640, screen_height = 480, fps = 50)

pizza_image = games.load_image("pizza.bmp")
the_pizza = games.Sprite(image = pizza_image,
                         x = games.screen.width/2,
                         y = games.screen.height/2,
                         dx = -1,
                         dy = 1)
games.screen.add(the_pizza)

games.screen.mainloop()
```

a. up and right
b. up and left
c. down and right
d. down and left

____ 26. What `Sprite` object property represents the object's velocity from left to right?

a. `x`
b. `y`
c. `dx`
d. `dy`

____ 27. Given that the following code is the `update()` method of a moving `Sprite` object, what will the object do when it reaches the edge of the graphics screen?

```
def update(self):
    if self.right > games.screen.width or self.left < 0 \
    or self.bottom > games.screen.height or self.top < 0:
        self.dx = 0
        self.dy = 0
```

a. bounce
b. stop
c. disappear
d. None of these

____ 28. Given that the following code is the `update()` method of a moving `Sprite` object, what will the object do when it reaches the edge of the graphics screen?

```
def update(self):
    if self.right > games.screen.width or self.left < 0:
        self.dx = -self.dx

    if self.bottom > games.screen.height or self.top < 0:
        self.dy = -self.dy
```

a. bounce
b. stop
c. disappear
d. None of these

____ 29. Given that the following code is the `update()` method of a moving `Sprite` object, what will the object do when it reaches the edge of the graphics screen?

```
def update(self):
    if self.right > games.screen.width or self.left < 0 \
   or self.bottom > games.screen.height or self.top <  0:
        self.destroy()
```

a. bounce
b. stop
c. disappear
d. None of these

____ 30. Given that `ship` is a `Sprite` object, what code snippet represents the number of objects currently overlapping ship?

a. `ship.overlapping_sprites`
b. `len(ship.overlapping_sprites)`
c. `ship.overlapping_sprites[0]`
d. `len(ship.overlapping_sprites[0])`

Completion

Complete each statement.

31. The `games` ____________________ function loads an image stored in a graphics file and returns an image object.

32. The `livewires` ____________________ module defines a set of constants for colors.

33. ____________________ is a `games` object that provides access to the graphics screen.

34. ____________________ is a `games` class for graphics objects with an image that can be displayed on the graphics screen.

35. ____________________ is a `games` class for text displayed on the graphics screen that disappears after a set period of time.

Matching

Match each item with a statement below

a. Package
b. Pixel
c. Sprite
d. `init()`
e. `mainloop()`
f. `fps`
g. `from`
h. `games`
i. `livewires`
j. `event_grab`

____ 36. A multimedia package, specifically for writing games.

____ 37. A `screen` property for the number of times each second that the graphics screen is updated.

____ 38. A `livewires` module that contains classes and functions for game programming.

____ 39. A set of modules.

____ 40. A `games` function that creates a new graphics screen.

____ 41. A `screen` property that determines whether or not input is focused to the graphics screen.

____ 42. A graphics object with an image.

____ 43. A single point on a graphics screen.

____ 44. Code that allows you to import specific modules of a package.

____ 45. A `screen` method that continuously updates the graphics screen and the objects on it.

Short Answer

46. Why would you typically load an image for a `Sprite` object with transparency on?

47. How can you place a `Sprite` object in the middle of the graphics screen without knowing the screen dimensions?

48. How is a `Message` object different from a `Text` object?

49. How does the `screen` object’s `fps` property affect the speed of moving sprites?

50. What happens to graphics objects during the `screen` object's `mainloop()` method?