

## Bowling IQ Topics

### Physical Game questions:

1. Which order is correct that would consist of a good smooth release?
  - a. Wrist Rotation, Finger Release, Thumb Release
  - b. Thumb Release, Wrist Rotation, Finger Release
  - c. Wrist Rotation, Thumb Release, Finger Release
  - d. Finger Release, Thumb Release, Wrist Rotation
2. Which of the following are characteristics of a strong wrist position? (Select all that apply)
  - a. Lower hook potential
  - b. Higher hook potential
  - c. Higher number of revolutions
  - d. Weaker rolling ball
3. Which of the following are characteristics of a relaxed wrist position at release? (Select all that apply)
  - a. Lower Hook potential
  - b. Higher hook potential
  - c. Higher number of revolutions
  - d. Weak rolling ball
4. Wrist positions directly affect the location of the fingers at the point of release.
  - a. True
  - b. False
5. Place the different types of releases in order of hook potential from lowest to highest.
  - a. Relaxed                1
  - b. Strong                 3
  - c. Firm                    2

### Bowling ball components and dynamics

6. Place the different types of coverstocks in order of hook potential from weakest to strongest.
  - a. Resin                    3
  - b. Resin with additives   4
  - c. Plastic                  1
  - d. Urethane                2
7. What is the general characteristic of a ball with a plastic coverstock?
  - a. Produce a smooth arching motion
  - b. Skid in high volume oil, gain traction in low volume or on dry portion
  - c. Increased traction in high volume of oil and potentially earlier hook
  - d. Generally Straight
8. What is the general amount of friction for a polyester coverstock?
  - a. Low to medium
  - b. High
  - c. Very low
  - d. Medium to high
9. What is the general characteristic of a urethane coverstock?
  - a. Produce a smooth arching motion

- b. Skid in high volume oil, gain traction in low volume or on dry portion
  - c. Increased traction in high volume of oil and potentially earlier hook
  - d. Generally Straight
10. What is the amount of friction for a urethane coverstock?
- a. Very Low
  - b. Medium to High
  - c. High
  - d. Low to medium
11. What is the general characteristic of a resin coverstock?
- a. Produce a smooth arching motion
  - b. Skid in high volume oil, gain traction in low volume or on dry portion
  - c. Increased traction in high volume of oil and potentially earlier hook
  - d. Generally Straight
12. What is the center of gravity on a bowling ball represent?
- a. Where the lightest point of the ball is located
  - b. Imaginary point inside of the ball where the total weight of the ball is thought to be concentrated
  - c. The exterior of the bowling ball where the ball meets the lane
  - d. The interior of the bowling ball which is referred to as the engine of the ball
13. The coverstock of a bowling ball is the outer shell of the ball that makes contact with the lane.
- a. True
  - b. False
14. The core of the bowling ball is the interior of the bowling ball and may consist of the inner core and/or outer core.
- a. True
  - b. False
15. What is track flare?
- a. The ball track progression due to axis migration
  - b. The number of times the ball rotates before it hits the pins
  - c. The number of boards the ball covers before it hits the pins
16. This spot on the bowling ball is used to indicate where the top of the weight block is located.
- a. Center of gravity
  - b. Mass Bias
  - c. Weight hole
  - d. Pin
17. The radius of gyration or RG refers to the movement or displacement of mass inside a ball.
- a. True
  - b. False
18. What does it mean when a bowling ball has a Low RG?
- a. The mass of the weight block is located closer to the coverstock of the ball
  - b. The mass of the weight block is located closer towards the center of the ball
  - c. The mass of the weight block is located evenly across the ball
  - d. The mass of the weight block is located towards one side of the ball
19. What does it mean when a bowling ball has a High RG?
- a. The mass of the weight block is located closer towards the center of the ball

- b. The mass of the weight block is located towards one side of the ball
  - c. The mass of the weight block is located evenly across the ball
  - d. The mass of the weight block is located closer to the coverstock of the ball
20. Differential of a bowling ball refers to how much energy it takes to rotate the ball with the weight block on its horizontal axis.
- a. True
  - b. False
21. What is differential in terms of a bowling ball?
- a. The measure of the amount of time it takes for a ball to complete one revolution
  - b. A cores weight shift or irregularity in shape that favors an area laterally from the center
  - c. The measurement between a core's height and width
  - d. The total measurement of a core's hook potential
22. The differential of a bowling ball represents the ball's dynamic potential.
- a. True
  - b. False

#### BALL MOTION

23. What are the phases of ball motion in order?
- a. Roll, Hook, Skid
  - b. Hook, Roll, Skid
  - c. Skid, Hook, Roll
  - d. Skid, Roll, Hook
  - e. Roll, Skid, Hook
24. During the skid phase the ball has: (Select all that apply)
- a. Highest ball speed
  - b. Lowest revolution rate
  - c. Less axis rotation
  - d. Maximum Hitting power
  - e. All of the above
25. During the hook phase the ball has: (Select all that apply)
- a. More force by rev rate than ball speed
  - b. Maximum axis rotation
  - c. Higher revolution rate
  - d. Less axis rotation
  - e. All of the above
26. During the roll phase the ball has: (Select all that apply)
- a. Minimal speed
  - b. Maximum revolution rate
  - c. Equal and minimal axis rotation and tilt
  - d. Maximum hitting power
  - e. All of the above
27. If the ball impacts the pins while still in the hook phase it will have a stronger hit.
- a. True
  - b. False
28. As the ball goes down the lane it loses speed.

- a. True
  - b. False
29. What should the ball do in the mid-lane? (Select all that apply)
- a. Speed up
  - b. Slow down
  - c. Hook
  - d. Roll
  - e. Skid
30. What factors affect ball motion? (Select all that apply)
- a. Lane Surface
  - b. Oil Patterns
  - c. Humidity
  - d. Coverstocks/Cores
  - e. All of the above
31. Early ball motion phase includes a longer skid phase, later hook phase and little to no roll phase
- a. True
  - b. False
32. Late ball motion phase includes a shorter skid phase with a longer roll phase.
- a. True
  - b. False
33. Synthetic lanes generally will produce early ball motion due to it being a higher friction surface.
- a. True
  - b. False
34. Wood lanes will generally produce early ball motion due to it being a higher friction surface.
- a. True
  - b. False
35. When released the ball rotates around this and is critical to understand ball motion.
- a. Positive axis point
  - b. Negative axis point
  - c. Axis tilt
  - d. Axis rotation
36. A bowlers PAP is used to determine rev rate, axis rotation, and axis tilt.
- a. True
  - b. False
37. Which of the following influences ball motion
- a. Rev rate
  - b. Ball speed
  - c. Axis tilt
  - d. Axis rotation
  - e. All of the above
38. Increased axis rotation will increase hook
- a. True
  - b. False

39. Increased axis tilt will increase hook  
a. True  
b. False
40. Decreased axis tilt will decrease the amount skid  
a. True  
b. False

#### LANE PATTERNS AND LANE PLAY

41. What is considered a short oil pattern length?  
a. 36 to 42 feet  
b. 45 feet  
c. 37 feet  
d. < 36 feet  
e. > 42 feet
42. What is considered a medium oil pattern length?  
a. 36 to 42 feet  
b. 45 feet  
c. 37 feet  
d. < 36 feet  
e. > 42 feet
43. What is considered a long oil pattern length?  
a. 36 to 42 feet  
b. 45 feet  
c. 37 feet  
d. < 36 feet  
e. > 42 feet
44. What are factors that affect lane dressing? (Select all that apply)  
a. Temperature  
b. Type of lane machine  
c. Type of lane surface  
d. Time of day (shift)  
e. All of the above
45. For optimal striking potential one's ball speed and rev rate should match up.  
a. True  
b. False
46. A rev dominant player is one who's rev-rate is too high for their ball speed.  
a. True  
b. False
47. A speed dominant player is one who's rev-rate is too high for their ball speed.  
a. True  
b. False
48. The viscosity of the oil on the lane can affect ball motion.  
a. True  
b. False

49. In terms of viscosity of oils a higher viscosity oil will typically do what to ball motion? (Choose all that apply)
- a. Decrease hook potential
  - b. Increase hook potential
  - c. Make a ball skid longer down the lane
  - d. Make the ball motion more of a "hockey stick motion"
  - e. None of the above
50. When bowling on a fresh 35' pattern where should a bowler's breakpoint be?
- a. 3 board
  - b. 10 board
  - c. 4 board
  - d. 12 board
  - e. None of the above
51. How does an athlete determine breakpoint board based on pattern length?
- a. PL-31
  - b. PL-30
  - c. PL- PL + 2
  - d. Any of the above will work
  - e. None of the above will work
52. In regards to short oil patterns what are its characteristic(s)?
- a. Never much hold area
  - b. Can play a variety of lines
  - c. Never much swing area
  - d. All of the above
  - e. None of the above
53. Which of the following does an athlete need to pay attention to in regards to oil pattern?
- a. Length
  - b. Shape
  - c. Volume
  - d. Load application
  - e. All of the above
54. Which of the following ratios would be considered sport compliant?
- a. 4 to 1
  - b. 6 to 1
  - c. 2 to 1
  - d. 12 to 1
55. For fresh long oil patterns we want our axis rotation to be lower.
- a. True
  - b. False
56. When making angular moves in on a pattern athletes want to increase their decrease their axis rotation.
- a. True
  - b. False
57. Which of the following are adjustments bowlers can make on the bowling lane?
- a. Loft

- b. Speed
- c. Release
- d. Angle
- e. All of the above

58. When would you increase your ball speed?

- a. Short patterns
- b. Higher oil volume
- c. High friction lane surfaces
- d. All of the above
- e. None of the above

#### General Bowling Knowledge

59. How many frames is a typical game of American Ten Pin consist of?

- a. 12
- b. 11
- c. 13
- d. 10
- e. 9

60. A strike is scored as:

- a. ten pins plus your next ball
- b. ten pins plus your next two balls
- c. ten pins plus your next two frames
- d. ten pins plus your next frame
- e. none of the above

61. A spare is scored as:

- a. ten pins plus your next ball
- b. ten pins plus your next two balls
- c. ten pins plus your next two frames
- d. ten pins plus your next frame
- e. none of the above

62. How long is the bowling lane foul line to headpin?

- a. 55 feet
- b. 65 feet
- c. 60 meters
- d. 60 feet
- e. 55 meters

63. How long is the bowling approach?

- a. 10 feet
- b. 17 feet
- c. 15 feet
- d. 20 feet
- e. None of the above

64. How wide is a bowling lane?

- a. 40 inches
- b. 2 feet

- c. 39 inches
  - d. 42 inches
  - e. 3 feet
65. How many boards are there on a bowling lane?
- a. 25
  - b. 30
  - c. 35
  - d. 39
  - e. 42
66. Which of the following is a legal bowling delivery?
- a. Ball leaves person's possession and crosses foul line into playing territory.
  - b. Ball leaves person's possession and person is in playing territory
  - c. Delivery of ball is assisted by a machine
  - d. All of the above
  - e. None of the above
67. A dead ball can be called when a ball rolls into the gutter and jumps out to knock down pins.
- a. True
  - b. False
68. You can alter your bowling ball surface during practice of a competition.
- a. True
  - b. False
69. You can alter your bowling ball surface during competition.
- a. True
  - b. False
70. You can alter your bowling ball surface between blocks of a competition.
- a. True
  - b. False
71. As a bowler you can use an abrasive, cleaner or polish on just the track of a bowling ball.
- a. True
  - b. False
72. What is the maximum score for a game of bowling?
- a. 299
  - b. 300
  - c. 305
  - d. 350
73. What is it known as when a bowler knocks down all of their pins after their second ball?
- a. Open Frame
  - b. Double
  - c. Single Frame
  - d. Strike
  - e. Spare
74. What are three consecutive strikes known as?
- a. Bagger
  - b. Three-bagger
  - c. Turkey



- d. Double
75. What is the area called where the pins are set?
- a. Rack
  - b. Deck
  - c. Pindeck
  - d. End
  - e. Approach