

TECHNOLOGY BOWL PRELIMINARY AND SEMIFINAL ROUNDS



STATE ADVISOR/EVENT COORDINATOR INSTRUCTIONS

- Do not provide a copy of this page to the teams.
- Check for possible competition updates related to the event: [Competition Updates](#)
- Please review the complete coordinator instructions in the high school guide.

PRELIMINARY ROUND

Complete the test to determine the semifinalists. The combined scores of the three (3) individual members will determine the semifinalists. One (1) hour time limit.

SEMIFINAL ROUND

The state advisor will determine the number of teams in the semifinal round.

The maximum number of teams should be sixteen (16).

The questions provided are for four (4) rounds. The same questions are used for each match in the round. Each round has three (3) bonus questions in case of a tie. Four (4) additional sets of questions are provided in case a head-to-head match is still a tie after the extra questions. Note which teams receive any additional questions so that they are not used again with the teams in the specific match.

TECHNOLOGY BOWL
PRELIMINARY ROUND
TEST



Directions: Follow the event coordinator's instructions for completing the preliminary round test and mark your answer sheet carefully. One (1) hour time limit.

- In chemistry, which of the following bonds is the most popular?
 - C-H
 - O-H
 - C-O
 - N-H
- Which of the following gases has the weakest attractive forces between particles?
 - CO₂
 - He
 - NO
 - HCl
- Describe the difference between a question, generated through observation, and a hypothesis.
 - They are the same.
 - A hypothesis has been thoroughly tested and found to be true.
 - A hypothesis is a tentative assumption based on what is already known.
 - A hypothesis is a broad explanation firmly supported by evidence.
- What does Newton's first law of motion cover?
 - Gravity
 - Inertia
 - Energy
 - Density
- Which of the following particles is found in the nucleus of an atom?
 - Electron
 - Proton
 - Hadron
 - Neutrino
- The amount of matter in an object is called its what?
 - Mass
 - Density
 - Cubit
 - Weight
- An ideal fluid is
 - one which obeys Newton's Law of Viscosity
 - frictionless and incompressible
 - very viscous
 - frictionless and compressible
- Rockets are able to lift off and travel because of:
 - Thrust
 - Speed
 - Velocity
 - Escape velocity
- A solution is made by dissolving some salt in a beaker of water. The salt is referred to as the:
 - solute
 - filtrate
 - solution
 - solvent
- What number is added to both sides of the equation $x^2 - 8x + 3 = 0$ to solve it by completing the square?
 - 16
 - 16
 - 64
 - 64
- In the design process, these are the parameters that a solution must fit within:
 - Criteria
 - Constraints
 - Feedback
 - Redesign

12. What does a Biomedical Engineer do?
- A. Focuses on the design, development, and manufacturing of agricultural products.
 - B. Focuses on the design, development, and manufacture of aircraft.
 - C. Focuses on the design, development, and manufacture of biological and medical products to enhance the medical field.
 - D. None of these is correct
13. A test vehicle uses a parachute to decrease speed at the end of a trial run. This parachute functions by increasing which of the following forces?
- A. Lift
 - B. Thrust
 - C. Gravity
 - D. Drag
14. An MP3 player would be an example of which type of technology?
- A. Medical technology
 - B. Electronics
 - C. Mechanical energy
 - D. Industrial technology
15. A cog or gear would be an example of what type of technology?
- A. Mechanical technology
 - B. Industrial technology
 - C. Medical technology
 - D. Electronics
16. In medical technology, what is the suffix for "inflammation?"
- A. Tomy
 - B. Itis
 - C. Scope
 - D. Osis
17. What is the first step of the engineering design process?
- A. Specify requirements
 - B. Define the problem
 - C. Brainstorm solutions
 - D. Research
18. A diode that can conduct in reverse bias and is commonly used in voltage regulation is a(n):
- A. Zener diode
 - B. Ammeter
 - C. P-N diode
 - D. Schottky diode
19. The associativity of which of the following operators is Left to Right, in C++?
- A. Unary Operator
 - B. Logical not
 - C. Array element access
 - D. addressof
20. In which of the following is a person constantly followed/ chased by another person or group of several people?
- A. Phishing
 - B. Bulling
 - C. Stalking
 - D. Identity theft
21. Which of the following usually observe each activity on the internet of the victim, gather all information in the background, and send it to someone else?
- A. Adware
 - B. Malware
 - C. Spyware
 - D. All of the above
22. Hackers usually used the computer virus for _____ purpose.
- A. To log, monitor each and every user's keystroke
 - B. To gain access to sensitive information like user's ID and passwords
 - C. To corrupt the user's data stored in the computer system
 - D. All of the above

23. In nanotechnology, a carbon sphere made up of a series of hexagons and pentagons, similar to a miniature soccer ball, is commonly referred to as a:
- A. Buckyball
 - B. Nanoparticle
 - C. Nanotex
 - D. Nanowhisker
24. A pair of pliers is what class of lever?
- A. Class 1
 - B. Class 2
 - C. Class 3
 - D. Class 4
25. White blood cells engulf invading bacterium in a process called:
- A. Phagocytosis
 - B. Pinocytosis
 - C. Receptor-mediated endocytosis
 - D. Exocytosis
26. What is Software Engineering?
- A. Designing a software
 - B. Testing a software
 - C. Application of engineering principles to the design of software
 - D. None of the above
27. In medical technology, what is "Osteoporosis?"
- A. Watery eyes
 - B. Bone loss
 - C. Hearing loss
 - D. Bone bruise
28. Software debugging is known as _____?
- A. identifying the task to be computerized
 - B. creating program code
 - C. creating the algorithm
 - D. finding and correcting errors in the program code
29. Materials that need further processing in order to be useful are known as:
- A. Finished products
 - B. Manufactured goods
 - C. Industrial stock
 - D. Engineering products
30. Which technology is often used to track the movement of a user's head in virtual reality?
- A. Accelerometer
 - B. GPS
 - C. Gyroscope
 - D. Sonar
31. What is the term for the technology that enables users to feel physical sensations in virtual reality?
- A. Haptic feedback
 - B. Augmented reality
 - C. Motion tracking
 - D. Virtual simulation
32. Gas produced by processing animal and plant waste is called:
- A. Fossil fuels
 - B. Peat
 - C. Biogas
 - D. Natural gas
33. Which of the following terms does not directly affect exposure in photography?
- A. F-stop
 - B. AF/MF
 - C. Shutter Speed
 - D. ISO
34. What is a firewall in a computer network?
- A. The physical boundary of the network
 - B. An operating system of the computer network
 - C. A system designed to prevent unauthorized access
 - D. A web browsing software

35. A gate that provides an output of 1 if either or both of the inputs are 1 is a(n):
- A. OR gate
 - B. AND gate
 - C. NOT gate
 - D. NAND gate
36. In computer networking, each IP packet must contain:
- A. Only Source address
 - B. Only Destination address
 - C. Source and Destination address
 - D. Source or Destination address
37. In computer networking, what is the use of the Ping command?
- A. To test if a device on the network is reachable
 - B. To test a hard disk fault
 - C. To test a bug in an Application
 - D. To test a Printer Quality
38. Coaxial cable consists of _____ concentric copper conductors.
- A. 1
 - B. 2
 - C. 3
 - D. 4
39. Geostationary satellites:
- A. Are placed at a fixed point above the earth
 - B. Rotate the earth about a fixed axis
 - C. Rotate the earth about varying axis
 - D. All of the above
40. Which of the following is not a physical component of an electronic circuit?
- A. Capacitor
 - B. Diode
 - C. Inductor
 - D. Temperature
41. The most commonly used transistor circuit is:
- A. Common emitter
 - B. Common base
 - C. Common collector
 - D. All of the above three equally
42. A control surface located on the rear of a horizontal stabilizer that controls vertical movement of an airplane nose is known as the _____.
- A. Rudder
 - B. Elevator
 - C. Spoiler
 - D. Flap
43. Doors meant to allow fresh air and at the same time prevent entry of insects is known as:
- A. Rolling Shutter
 - B. Collapsible
 - C. Wire Gauzed Door
 - D. Lowered Door
44. In medical technology, what is "Hypertension?"
- A. High blood pressure
 - B. Low blood pressure
 - C. High blood sugar
 - D. High cholesterol
45. OS' computer abbreviation usually means?
- A. Order of Significance
 - B. Open Software
 - C. Operating System
 - D. Optical Sensor
46. An example of an external combustion engine is a(n) _____.
- A. Diesel engine
 - B. Gasoline engine
 - C. Steam engine
 - D. Wankel rotary engine

TECHNOLOGY BOWL
PRELIMINARY ROUND
TEST



47. Artificial intelligence is about _____.
- A. playing a game on a computer
 - B. making a machine intelligent
 - C. programming a machine with your own intelligence
 - D. putting your intelligence in a machine
48. A device that allows the user to vary the electrical resistances in a circuit is known as a(n):
- A. Voltmeter
 - B. Potentiometer
 - C. Electrometer
 - D. Multimeter
49. If a robot is able to change its own trajectory as per external conditions, then the robot is considered as the _____.
- A. mobile
 - B. non-servo
 - C. open loop
 - D. intelligent
50. Which AI technique enables the computers to understand the associations and relationships between objects and events?
- A. Heuristic Processing
 - B. Cognitive Science
 - C. Relative Symbolism
 - D. Pattern Matching

TECHNOLOGY BOWL ANSWER KEY



HIGH SCHOOL

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- | | |
|-------|-------|
| 1. B | 26. C |
| 2. B | 27. B |
| 3. C | 28. D |
| 4. B | 29. C |
| 5. B | 30. C |
| 6. A | 31. A |
| 7. B | 32. C |
| 8. A | 33. B |
| 9. A | 34. C |
| 10. B | 35. A |
| 11. B | 36. C |
| 12. C | 37. A |
| 13. D | 38. B |
| 14. B | 39. A |
| 15. A | 40. D |
| 16. B | 41. A |
| 17. B | 42. B |
| 18. A | 43. C |
| 19. C | 44. A |
| 20. C | 45. C |
| 21. C | 46. C |
| 22. D | 47. B |
| 23. A | 48. B |
| 24. A | 49. D |
| 25. A | 50. D |