

# FOUNDATIONS OF INFORMATION TECHNOLOGY (FIT)



## OVERVIEW

Participants complete a examination covering essential IT skills and knowledge needed to perform tasks commonly performed by all levels of IT professionals alike. Areas include but not limited to: using features and functions of common operating systems and establishing network connectivity, identifying common software applications and their purpose, and using security and web browsing best practices. Semifinalists exhibit proficiency and demonstrate creative problem solving by applying techniques to troubleshoot an industry-related challenge.

## ELIGIBILITY

One (1) individual; two (2) members per chapter may participate.

## TIME LIMITS

### PRELIMINARY ROUND

1. Participants have one (1) hour to complete the test.

### SEMIFINAL ROUND

1. Participants have fifteen (15) minutes to complete the on-site skills challenge
  - a. Ten (10) minutes are allotted for troubleshooting the problem
  - b. Five (5) minutes to present the solution

## LEAP

A team LEAP Response is required for this event and must be submitted at event check-in.

## ATTIRE

TSA competition attire is required.

## PROCEDURE

### PRELIMINARY ROUND

1. Participants report for the test at the time and place stated in the conference program and submit the LEAP Response.

2. Participants take the exam.
3. A list of twelve (12) semifinalists (in random order) will be posted.

### SEMIFINAL ROUND

1. Semifinalists will report at the time and location stated in the conference program to schedule the on-site challenge.
2. At least ten minutes prior to the scheduled time, semifinalists report to the event area at the time and place stated in the conference program for the on-site challenge.
3. Participants have fifteen (15) minutes to complete the on-site challenge; ten (10) minutes are allotted for troubleshooting the problem and five (5) minutes to present.
4. The LEAP Response will be judged for semifinalists.
5. Ten (10) finalists will be announced during the conference awards ceremony.

## REGULATIONS AND REQUIREMENTS

### PRELIMINARY ROUND

- A. Participants take a multiple choice test to evaluate their knowledge of basic IT fundamentals.
- B. Tests may be administered online or via a scan-type answer sheet.
- C. Depending on the format of the exam, which will be posted on the Competition Updates page three (3) months prior to the conference, participants shall be prepared to bring:
  1. Two (2) sharpened No.2 pencils
  2. One (1) laptop
  3. Extra charged laptop battery
- D. Should the test be administered online, participants will be required to use their own laptops to take the timed exam. Participants will not:
  - be required to download software on-site.
  - have access to electrical power/outlets during the event.

- E. Participants will:
- be given one (1) hour to complete the sixty (60)-question exam with one (1) minute to read and answer each question.
  - need to provide Internet access (TSA will not supply Internet).
  - not be allowed to use additional resources when taking the exam.
- F. Refer to the Competition Updates page (3) months prior the conference regarding logistics pertaining to the exam.

### SEMIFINAL ROUND

- A. Semifinalists report at the time and location stated in the conference program to schedule the on-site challenge.
- B. Semifinalists report to the event area at the designated time and place.
- C. Participants are administered the problem.
- D. Semifinalists are given ten (10) minutes to troubleshoot the issue.
- E. After ten minutes has commenced, the participant is allowed five (5) minutes to communicate the issue, approach, and resolution to the judges.
- F. All solutions must be tested, demonstrated and presented by participants in front of the judges.
- G. The LEAP Response:
1. Participants document the leadership skills they have developed and demonstrated while working on this event, and on a non- competitive event leadership experience.
  2. Find specific LEAP Response regulations in the LEAP Program section of this guide, and on the [TSA website](#).

## EVALUATION

### PRELIMINARY ROUND

1. The test score is used to determine the twelve (12) semifinalists.

### SEMIFINAL ROUND

1. Semifinalists will be evaluated on their delivery and solution to the on-site problem, and the content and quality of their LEAP Response.

## STEM INTEGRATION

Depending upon the subject of the problem, this event may align to one or more STEM areas.

## CAREERS RELATED TO THIS EVENT

This competition connects to one or more of the careers below:

- Information support & services
- Network systems
- Programming & software development
- Web & digital communications
- Help desk
- Computer software engineer

## SAMPLE CHALLENGE TOPICS

This list serves only as an *example* of challenge categories.\*

### DEVICES

1. Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices.

### HARDWARE & SOFTWARE

1. Assess issues pertaining to hardware/software components
2. Assess issues pertaining to the collection and exchange of data

### TROUBLESHOOTING

1. Systematically identify and fix problems with computing devices and their components.

### NETWORK COMMUNICATION AND ORGANIZATION

1. Understand the role of protocols and how they enable secure and precise communication.

### SAFETY LAW & ETHICS

1. Describe trade-offs between allowing information to be public and keeping information private and secure.

### STORAGE

1. Represent data using multiple encoding schemes.

### PROGRAM DEVELOPMENT

1. Systematically test and refine programs using a range of test cases to better meet the need of users and to evaluate whether programs function as intended.

### CULTURE

1. Compare tradeoffs associated with computing technologies that affect people's everyday activities and career options.
2. Discuss issues of bias and accessibility in the design of existing technologies.

\*Challenge categories are based on the Computer Science Teachers Association (CTSA) K-12 standards.

# FOUNDATIONS OF INFORMATION TECHNOLOGY (FIT) 2020 & 2021 OFFICIAL RATING FORM MIDDLE SCHOOL

Judges: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline in the rating form, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an “adequate” score of 7 for an X1 criterion = 7 points; an “adequate” score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.

**Go/No Go Specifications**

- Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box.
- If an item is missing, leave the box next to the item blank and place a check mark in the box labeled ENTRY NOT EVALUATED.
- If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

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Laptop is present (if applicable)  
 Completed LEAP Response is present  
 ENTRY NOT EVALUATED

<b>TEST (50 points)</b>
<b>TEST SUBTOTAL (50 points)</b>

Rules violations (a deduction of 20% of the total possible points for the above sections) must be initialed by the judge, coordinator, and manager of the event. Record the deduction in the space to the right.  Indicate the rule violated: _____
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<b>PRELIMINARY SUBTOTAL (50 points)</b>
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SEMIFINAL ON-SITE PROBLEM – SUBJECTIVE (50 points)			
CRITERIA	Minimal performance	Adequate performance	Exemplary performance
	1-4 points	5-8 points	9-10 points
<b>Troubleshooting</b> (X2)	Participant did not understand the problem. The solution was not identified. Participant did not demonstrate an understanding of basic IT knowledge.	Participant demonstrated an adequate understanding of the problem. The solution was identified, but the participant struggled with the application of the solution.	Participant clearly understood the problem. Solution was identified, and applied appropriately.
<b>Technical Skill</b> (X2)	Participant did not demonstrate knowledge of and an understanding of how to utilize the technological equipment and techniques; participant shows little or no creativity in troubleshooting methods.	Participant demonstrates some knowledge of and understanding of how to utilize the technological equipment and techniques; participant shows some creativity in applied techniques.	Participant clearly demonstrates knowledge and understanding of how to utilize the technological equipment and techniques; participant shows creativity and a high level of skill in applied techniques.

Record scores in the column spaces below.



SEMIFINAL ON-SITE PROBLEM – SUBJECTIVE (50 points) – continued				
<b>Delivery</b> (X1)	Participant is verbose and/or uncertain in his/her presentation; participants' posture, gestures, and lack of eye contact diminish the presentation.	Participant is somewhat well-spoken and clear in his/ presentation; participants' posture, gestures, and eye contact are acceptable in the presentation.	Participant is well-spoken and distinct in its presentation; the participants' posture, gestures, and eye contact result in a polished, natural, and effective presentation.	
<b>SEMIFINAL ON-SITE PROBLEM (SUBJECTIVE) SUBTOTAL (100 points)</b>				

SEMIFINAL LEAP RESPONSE (10 points)				
CRITERIA	Minimal performance	Adequate performance	Exemplary performance	
	1-4 points	5-8 points	9-10 points	
<b>LEAP Response</b> (10% of the total event points)	The individual's efforts are not clearly communicated, lack detail, and are unconvincing; few, if any, attempts are made to identify and incorporate the SLC Practices.	The individual's efforts are adequately communicated, include some detail, are clear, and are generally convincing; identification and incorporation of the SLC Practices are satisfactory.	The individual's efforts are clearly communicated, fully-detailed, and convincing; identification and incorporation of the SLC Practices are excellent.	
<b>SEMIFINAL LEAP RESPONSE SUBTOTAL (10 points)</b>				

Record scores in the column spaces below.

Rules violations (a deduction of 20% of the total possible points for the above sections) must be initialed by the judge, coordinator, and manager of the event. Record the deduction in the space to the right.

Indicate the rule violated: \_\_\_\_\_

**SEMIFINAL SUBTOTAL (60 points)**

**To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary. TOTAL (110 points)**

Comments:

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I certify these results to be true and accurate to the best of my knowledge.

**JUDGE**

Printed name: \_\_\_\_\_ Signature: \_\_\_\_\_

# FOUNDATIONS OF INFORMATION TECHNOLOGY (FIT) EVENT COORDINATOR INSTRUCTIONS

## PERSONNEL

- A. Event coordinator
- B. Judges:
  - 1. Semifinalist round, two (2) or more
- C. Assistants for the set-up, monitoring, and clean-up of the on-site activity, two (2) or more

## MATERIALS

- A. Coordinator’s packet, containing:
  - 1. Event guidelines, one (1) copy for the coordinator and each judge
  - 2. TSA Event Coordinator Report
  - 3. List of judges/assistants/proctors
  - 4. Results envelope with coordinator forms
- B. Tables and chairs for participants
- C. Tables and chairs for judges
- D. Coordinators are responsible for creating the test to be administered at the national conference; copies will be provided by the national TSA office.
- E. Answer sheets (scan-type) and paper (if applicable)
- F. Extra sharpened no.2 pencils (if applicable)
- G. Twelve (12) copies of a well-written, technologically appropriate problem that can be objectively measured, one (1) copy per individual
- H. Adequate conditions, tools, materials, monitoring, and testing devices for the problem
- I. Stopwatch or clock for the timekeeper

## RESPONSIBILITIES

### AT THE CONFERENCE

- 1. Attend the mandatory coordinator’s meeting at the designated time and location.
- 2. Report to the CRC room and check the contents of the coordinator’s packet.

- 3. Review the event guidelines and check to see that enough personnel have been scheduled.
- 4. Inspect the area(s) in which the event is to be held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.
- 5. At least one (1) hour before the event is to begin, meet with judges to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.

### PRELIMINARY ROUND

- 1. Prior to the conference, the event coordinator shall become familiar with the format of the exam (refer to the Competition Updates of the [TSA website](#)).
- 2. Late participants, and or entries are considered on a case-by-case basis and only when lateness is caused by events beyond the participant’s control.
- 3. In order to compete, participants must be on the entry list or must have approval of the CRC.
- 4. Participants registered but not present shall be disqualified, unless they have received approval from the CRC. No additional time will be granted to take the exam.
- 5. Should the test be administered via scan-type answer sheet, proceed with the following steps:
  - a. Begin the event at the scheduled time by closing the doors and checking the entry list.
  - b. All participants should be in the room at this time.
  - c. Distribute the answer sheet (scan-type) and paper.
  - d. Monitor the one (1)-hour test.
  - e. Score the exams if needed.

6. Decisions about rules violations must be discussed and verified with the judges, event coordinator, and the CRC manager to determine either:

- To deduct twenty percent (20%) of the total possible points in this round
- To disqualify the entry

The event coordinator, judges and CRC manager must all initial either of these actions on the rating form.

7. Judges determine the twelve (12) semifinalists and discuss and break any ties.
8. Submit semifinalist results and all related forms in the results envelope to the CRC room.

8. Discuss rule violations (e.g. 20% deduction, disqualification) and have all relevant parties initial the rating form.

9. Judges determine the ten (10) finalists and discuss and break any ties.

10. Submit the finalist results and all related forms in the results envelope to the CRC room.

11. Manage the security and removal of materials from the area.

### SEMIFINAL ROUND

1. At least one (1) hour before the event is scheduled to begin, meet with semifinalist judges to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.
2. Coordinate with the event manager to ensure that the stage is set for the on-site problem. Check and ensure that:
  - the required technical equipment is in place and functioning as needed.
  - the necessary connections are in place.
  - the problem can be easily replicated.
3. Semifinalists report to the event area at the time and place noted in the conference program to sign up for a skills presentation time.
4. Participants do NOT have access to electrical power/outlets during the event.
5. Participants do NOT have access to the Internet during the event.
6. Students must have software needed for the competition downloaded and accessible on their computers (requirements will be posted under the Competitions/Themes and Problems section of the [TSA website](#)).
7. All solutions must be tested, demonstrated and presented by participants in front of the judges. Judges and assistants observe, with judges evaluating solutions as soon as appropriate.