



2020-2021

# Technical Skills Assessment Programming and Software Development

## Results by Standard

Legend (%)		
0-50%	51-75%	76-100%

Assessment: Programming and Software Development Number tested: 46	% Correct 17-18	% Correct 18-19	% Correct 20-21
<b>CONTENT STANDARD 1.0: Demonstrate critical thinking and problem-solving skills as they apply to programming.</b>	66.89%	67.81%	69.10%
1.1 Apply basic programming principles.	67.84%	68.41%	71.74%
1.4 Write a program that produces output.	48.99%	47.83%	52.17%
1.5 Select identifiers to use within programs.	83.78%	89.86%	82.61%
1.7 Write and run a program.	79.39%	81.52%	79.35%
<b>CONTENT STANDARD 2.0: Demonstrate ability to use variables, data types, and string manipulation to solve computer problems programmatically.</b>	75.00%	71.96%	77.50%
2.1 Demonstrate the process of declaring variables.	60.59%	59.18%	66.30%
2.2 Display variable values.	64.19%	57.97%	66.30%
2.3 Apply integral data types.	74.32%	78.26%	82.61%
2.5 Apply arithmetic operators.	94.59%	89.13%	92.93%
2.6 Apply boolean data type.	88.29%	84.54%	86.96%
2.9 Apply string data type.	72.07%	67.15%	73.91%
<b>CONTENT STANDARD 3.0: Demonstrate effective use of selection structures to add logic to programs.</b>	63.83%	56.86%	63.88%
3.1 Demonstrate logic-planning tools and decision-making.	72.97%	53.62%	65.22%
3.2 Make decision using the if statement.	70.72%	65.70%	77.54%
3.3 Make decisions using the if-else statement.	55.41%	47.83%	63.04%
3.4 Apply compound expressions in if statements.	77.03%	76.81%	58.70%
3.5 Make decisions using the switch statement.	63.51%	43.48%	54.35%
3.6 Apply the conditional operator.	59.46%	55.80%	59.78%
3.7 Apply the NOT operator.	67.57%	59.42%	59.78%
3.8 Describe how to avoid common errors when making decisions, and apply problem-solving skills in context.	39.19%	42.03%	54.35%

<b>Assessment: Programming and Software Development</b> <b>Number tested: 46</b>	<b>% Correct</b> <b>17-18</b>	<b>% Correct</b> <b>18-19</b>	<b>% Correct</b> <b>20-21</b>
<b>CONTENT STANDARD 4.0: Demonstrate ability to test, debug and validate programming applications.</b>	69.41%	68.38%	72.53%
4.1 Locate a logic error by stepping through the code.	75.23%	74.88%	74.64%
4.2 Locate logic errors using breakpoints.	72.07%	72.46%	71.74%
4.3 Fix syntax and logic errors.	64.32%	62.03%	71.74%
<b>CONTENT STANDARD 5.0: Differentiate between the various types of repetition structures and use each repetition structure appropriately in program development.</b>	59.46%	58.86%	64.21%
5.1 Apply the loop structure.	66.67%	72.95%	76.81%
5.2 Create loops using the while statement.	57.30%	54.78%	58.26%
5.3 Create loops using the for statement.	58.45%	55.07%	61.96%
5.5 Apply nested loops.	52.70%	52.17%	65.22%
<b>CONTENT STANDARD 6.0 Use methods to increase functionality and to modularize programs</b>	80.18%	76.33%	81.88%
6.5 Write a method that returns a value.	81.35%	79.42%	83.04%
6.6 Pass an array to a method.	74.32%	60.87%	76.09%
<b>CONTENT STANDARD 7.0: Demonstrate understanding of arrays and structure and apply concepts in program development.</b>	65.03%	61.59%	69.57%
7.1 Declare an array and assign values to array elements.	70.95%	64.49%	72.83%
7.2 Access array elements.	66.49%	66.67%	74.78%
7.3 Search an array using a loop.	45.95%	30.43%	36.96%
<b>CONTENT STANDARD 8.0: Demonstrate understanding of object-oriented programming concepts.</b>	67.43%	61.59%	66.74%
8.1 Describe and apply class concepts.	62.16%	56.52%	70.11%
8.2 Create classes from which objects can be instantiated.	70.61%	65.58%	67.39%
8.3 Create objects.	71.62%	63.77%	58.70%
<b>1CONTENT STANDARD 11.0: Apply concepts and principles of systems planning and development.</b>	52.03%	54.35%	52.17%
11.3 Explain reuse and its role in software development.	52.03%	54.35%	52.17%
<b>1CONTENT STANDARD 13.0: Demonstrate knowledge of application design principles.</b>	50.34%	50.36%	46.20%
13.3 Concisely define each of the following key database design terms: relation, primary key, functional dependency, foreign key, referential integrity, field, data type, null value, denormalization, file organization, index, and secondary key.	50.34%	50.36%	46.20%