




 Credential Maintenance Program Pulmonary Function Technology Assessment Detailed Content Outline <i>Multiple-choice items are linked to open cells.</i> *Test takers will be asked to integrate (apply or analyze) information.	Cognitive Level		Total
	Recall	Integration*	
First Quarter of the Calendar			5
I. INSTRUMENTATION / EQUIPMENT	2	3	5
A. Set Up, Maintain, Calibrate	1	1	2
1. Body habitus equipment (for example, stadiometer, body weight scale, caliper)			
2. Blood gas analyzers			
3. Spirometers			
4. Aerosol delivery devices (for example, nebulizers, dosimeters)			
5. Metered dose or dry powder inhalers			
6. Valves (for example, directional, demand)			
7. Gas analyzers (for example, nitrogen, helium, oxygen, methane, CO)			
8. Body plethysmographs			
9. Exercise equipment (for example, treadmill, cycle ergometer)			
10. Field walking test equipment (for example, 6MWT, shuttle walk test)			
11. ECG monitors			
12. Gas delivery systems (for example, blenders, flowmeters)			
13. Pressure measuring devices (for example, manometers, transducers)			
14. Gas and water absorbers (for example, Drierite®, Nafion®, Perma Pure® tubing)			
15. Emergency management equipment (for example, defibrillator, crash cart)			
16. Arterial / venous blood collection equipment			
17. Quality control devices (for example, calibration syringes, manometers, isothermal lung analog)			
18. Infection control materials / methods (for example, wipes, PPE, sterilization devices, filters)			
19. Monitors			
a. pulse oximeters			
b. blood pressure (for example, manual cuff, automated)			
B. Troubleshoot	1	1	2
1. Body habitus equipment (for example, stadiometer, body weight scale, caliper)			
2. Blood gas analyzers			


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3. Spirometers				
4. Aerosol delivery devices (for example, nebulizers, dosimeters)				
5. Metered dose or dry powder inhalers				
6. Valves (for example, directional, demand)				
7. Gas analyzers (for example, nitrogen, helium, oxygen, methane, CO)				
8. Body plethysmographs				
9. Exercise equipment (for example, treadmill, cycle ergometer)				
10. Field walking test equipment (for example, 6MWT, shuttle walk test)				
11. ECG monitors				
12. Gas delivery systems (for example, blenders, flowmeters)				
13. Pressure measuring devices (for example, manometers, transducers)				
14. Gas and water absorbers (for example, Drierite®, Nafion®, Perma Pure® tubing)				
15. Emergency management equipment (for example, defibrillator, crash cart)				
16. Arterial / venous blood collection equipment				
17. Quality control devices (for example, calibration syringes, manometers, isothermal lung analog)				
18. Infection control materials / methods (for example, wipes, PPE, sterilization devices, filters)				
19. Monitors				
a. pulse oximeters				
b. blood pressure (for example, manual cuff, automated)				
C. Perform Quality Control	0	1	1	
1. Body habitus equipment (for example, stadiometer, body weight scale, caliper)				
2. Blood gas analyzers (for example, routine testing, proficiency testing)				
3. Spirometers				
4. Aerosol delivery devices (for example, nebulizers, dosimeters)				
5. Metered dose or dry powder inhalers				
6. Valves (for example, directional, demand)				
7. Gas analyzers (for example, nitrogen, helium, oxygen, methane, CO)				
8. Body plethysmographs				


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	Recall	Integration*	
9. Exercise equipment (for example, treadmill, cycle ergometer)			
10. Field walking test equipment (for example, 6MWT, shuttle walk test)			
Second Quarter of the Calendar			5
II. PROCEDURES	1	7	8
A. Select Test Protocols and Equipment	0	2	2
1. Body habitus measurement and estimates (for example, height, arm span, ulnar length, weight)			
2. Spirometry			
a. standard			
b. upright / supine			
3. Inhaled medication delivery (for example, MDI, DPI, nebulizers)			
4. Blood sample collection (for example, arterial, capillary)			
5. Sputum sample collection			
6. Blood gas analysis (for example, pH, PO ₂ , PCO ₂)			
7. CO-oximetry / hemoximetry			
8. Static lung volumes			
a. gas dilution methods			
b. body plethysmography			
9. DLCO			
10. Instruction for home testing (for example, spirometry, pulse oximetry)			
11. Patient education (for example, medication delivery, travel, asthma)			
12. Oxygen assessment / titration at rest and / or exercise			
13. Exercise testing			
a. field walking test (for example, 6MWT, shuttle walk test)			
b. monitored (for example, ECG, blood pressure, SpO ₂)			
14. Pulse oximetry			
15. Airway responsiveness			
a. bronchodilation studies			
b. bronchial provocation studies (for example, methacholine, exercise, EVH, mannitol)			
16. Airways resistance / conductance measurements by plethysmography			

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		Recall	Integration*	
17.	Respiratory muscle strength (for example, MIP, MEP, cough peak flow)			
18.	Patient safety (for example, standard precautions, adverse events / incidents, cross contamination)			
B. Perform the Procedure		0	3	3
1.	Body habitus measurements and estimates (for example, height, arm span, ulnar length, weight)			
2.	Spirometry			
	a. standard			
	b. upright / supine			
3.	Inhaled medication delivery (for example, MDI, DPI, nebulizers)			
4.	Blood sample collection (for example, arterial, capillary)			
5.	Sputum sample collection			
6.	Blood gas analysis (for example, pH, PO ₂ , PCO ₂)			
7.	CO-oximetry / hemoximetry			
8.	Static lung volumes			
	a. gas dilution methods			
	b. body plethysmography			
9.	DLCO			
10.	Instruction for home testing (for example, spirometry, pulse oximetry)			
11.	Patient education (for example, medication delivery, travel, asthma)			
12.	Oxygen assessment / titration at rest and / or exercise			
13.	Exercise testing			
	a. field walking test (for example, 6MWT, shuttle walk test)			
	b. monitored (for example, ECG, blood pressure, SpO ₂)			
14.	Pulse oximetry			
15.	Airway responsiveness			
	a. bronchodilation studies			
	b. bronchial provocation studies (for example, methacholine, exercise, EVH, mannitol)			
16.	Airways resistance / conductance measurements by plethysmography			
17.	Respiratory muscle strength (for example, MIP, MEP, cough peak flow)			
18.	Patient safety (for example, standard precautions, adverse events / incidents, cross contamination)			

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	Recall	Integration*	
Third Quarter of the Calendar			5
C. Evaluate Validity of Result	1	2	3
1. Body habitus measurements and estimates (for example, height, arm span, ulnar length, weight)			
2. Spirometry			
a. standard			
b. upright / supine			
3. Inhaled medication delivery (for example, MDI, DPI, nebulizers)			
4. Blood sample collection (for example, arterial, capillary)			
5. Sputum sample collection			
6. Blood gas analysis (for example, pH, PO ₂ , PCO ₂)			
7. CO-oximetry / hemoximetry			
8. Static lung volumes			
a. gas dilution methods			
b. body plethysmography			
9. DLCO			
10. Instruction for home testing (for example, spirometry, pulse oximetry)			
11. Patient education (for example, medication delivery, travel, asthma)			
12. Oxygen assessment / titration at rest and / or exercise			
13. Exercise testing			
a. field walking test (for example, 6MWT, shuttle walk test)			
b. monitored (for example, ECG, blood pressure, SpO ₂)			
14. Pulse oximetry			
15. Airway responsiveness			
a. bronchodilation studies			
b. bronchial provocation studies (for example, methacholine, exercise, EVH, mannitol)			
16. Airways resistance / conductance measurements by plethysmography			
17. Respiratory muscle strength (for example, MIP, MEP, cough peak flow)			
18. Patient safety (for example, standard precautions, adverse events / incidents, cross contamination)			

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	Recall	Integration*	
III. DATA MANAGEMENT	0	7	7
A. Calculate Results, Select Reference Ranges and Data	0	2	2
1. Blood gas			
2. CO-oximetry / hemoximetry			
3. Spirometry			
a. standard			
b. upright / supine comparison			
4. Static lung volumes			
a. gas dilution			
b. body plethysmography			
5. DLCO			
6. Home testing (for example, spirometry, pulse oximetry)			
7. Oxygen assessment / titration at rest and / or exercise			
8. Exercise test			
a. field walking test (for example, 6MWT, shuttle walk test)			
b. monitored (for example, ECG, blood pressure, SpO ₂)			
9. Blood pressure monitoring			
10. ECG analysis (for example, arrhythmia, rate, pattern)			
11. Pulse oximetry			
12. Airway responsiveness			
a. bronchodilation studies			
b. bronchial provocation studies (for example, methacholine, exercise, EVH, mannitol)			
13. Airways resistance / conductance measurements by plethysmography			
14. Respiratory muscle strength (for example, MIP, MEP, cough peak flow)			
15. Safety data (for example, hand hygiene compliance, event management)			
16. Quality control procedures (for example, mechanical, biological)			
17. Serial pulmonary function testing (for example, trending a single patient)			
18. Clinical history and demographics (for example, age, race, sex, smoking history, medication, clinical indication)			
19. Laboratory quality management (for example, customer satisfaction, inventory control, standard operating procedures)			

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	Recall	Integration*	
Fourth Quarter of the Calendar			5
B. Evaluate Reliability of Results	0	2	2
1. Blood gas			
2. CO-oximetry / hemoximetry			
3. Spirometry			
a. standard			
b. upright / supine comparison			
4. Static lung volumes			
a. gas dilution			
b. body plethysmography			
5. DLCO			
6. Home testing (for example, spirometry, pulse oximetry)			
7. Oxygen assessment / titration at rest and / or exercise			
8. Exercise test			
a. fixed walking test (for example, 6MWT, shuttle walk test)			
b. monitored (for example, ECG, blood pressure, SpO ₂)			
9. Blood pressure monitoring			
10. ECG analysis (for example, arrhythmia, rate, pattern)			
11. Pulse oximetry			
12. Airway responsiveness			
a. bronchodilation studies			
b. bronchial provocation studies (for example, methacholine, exercise, EVH, mannitol)			
13. Airways resistance / conductance measurements by plethysmography			
14. Respiratory muscle strength (for example, MIP, MEP, cough peak flow)			
15. Safety data (for example, hand hygiene compliance, event management)			
16. Quality control procedures (for example, mechanical, biological)			
17. Serial pulmonary function testing (for example, trending a single patient)			
18. Clinical history and demographics (for example, age, race, sex, smoking history, medication, clinical indication)			
19. Laboratory quality management (for example, customer satisfaction, inventory control, standard operating procedures)			

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		Recall	Integration*	
C. Evaluate Clinical Implications		0	3	3
1. Blood gas				
2. CO-oximetry / hemoximetry				
3. Spirometry				
a. standard				
b. upright / supine comparison				
4. Static lung volumes				
a. gas dilution				
b. body plethysmography				
5. DLCO				
6. Home testing (for example, spirometry, pulse oximetry)				
7. Oxygen assessment / titration at rest and / or exercise				
8. Exercise test				
a. field walking test (for example, 6MWT, shuttle walk test)				
b. monitored (for example, ECG, blood pressure, SpO ₂)				
9. Blood pressure monitoring				
10. ECG analysis (for example, arrhythmia, rate, pattern)				
11. Pulse oximetry				
12. Airway responsiveness				
a. bronchodilation studies				
b. bronchial provocation studies (for example, methacholine, exercise, EVH, mannitol)				
13. Airways resistance / conductance measurements by plethysmography				
14. Respiratory muscle strength (for example, MIP, MEP, cough peak flow)				
15. Safety data (for example, hand hygiene compliance, event management)				
16. Quality control procedures (for example, mechanical, biological)				
17. Serial pulmonary function testing (for example, trending a single patient)				
18. Clinical history and demographics (for example, age, race, sex, smoking history, medication, clinical indication)				
19. Laboratory quality management (for example, customer satisfaction, inventory control, standard operating procedures)				
Totals		3	17	20

Additional Assessment Form Specifications

Patient Type	Maximum Items Per Form
Pediatric	2
General	balance
Total	20

Topic	Maximum Items Per Form
Blood gas analysis	1
CO-oximetry / hemoximetry analysis	1