	Ethics	Recall	Application	Analysis
J. Interact with Members of an Interdisciplinary Team		**0**	**1**	**2**
1. Suggested modifications to the care plan based on the respiratory assessment				
2. Response to modifications to the care plan from other team members.				
K. Perform Procedures		**0**	**1**	**1**
1. Arterial line insertion and monitoring.				
2. Mini-BAL				
L. Troubleshoot Systems		**0**	**3**	**4**
1. Chest tube drainage				
2. Bronchoscopy				
3. Hemodynamic monitoring				
4. Inhaled vasodilator delivery e.g.,. • nitric oxide • prostaglandins				
TOTALS	**5***	**12**	**45**	**93**

* Each test form will include 5 items that engage thinking about ethics to select the best answer.
* Each of these 5 items also will
  - include content from a task that shows an open cell under the Ethics column.
  - be written to a cognitive level permitted for the task to which the item is linked.

Secondary Test Specifications

Item content also will be classified by the condition or disorder described for each patient.

	Item Counts Across the Examination		
	Target	Acceptable Range for Each Test Form	
Conditions or Disorders	**120**	**Minimum**	**Maximum**
General *No specific condition or disorder*	36	30	42
ALI / ARDS	15	11	19
COPD	13	10	16
Cardiac	13	10	16
Post-Surgical	11	8	14
Asthma	11	8	14
Trauma	10	7	13
Neurologic	7	5	9
Shock	7	5	9
Pulmonary Embolism	7	5	9
Immunocompromised	6	4	8
Pulmonary Hypertension	4	2	6
Bariatric	4	2	6
Burn / Inhalation Injury	3	1	5
Psychiatric	2	1	3
Cystic Fibrosis	1	0	1
Total	**150**		

Each new test form will include one 20-item pretest (e.g., 1A, 2A).

CPFT Examination Matrix

Content Area	Cognitive Level: Recall	Application	Analysis	Number of Items
I. Instrumentation/Equipment	**7**	**10**	**8**	**25**
A. Set up, maintain, calibrate	2	4	3	9
B. Troubleshoot	2	3	4	9
C. Perform quality control	3	3	1	7
II. Diagnostic Procedures	**10**	**19**	**21**	**50**
A. Select test protocols and equipment	2	5	3	10
B. Perform procedure	4	7	12	23
C. Evaluate validity of the results	4	7	6	17
III. Data Management	**10**	**12**	**3**	**25**
A. Calculate results, reference ranges, and select data	3	4	1	8
B. Evaluate reliability of results	4	3	1	8
C. Evaluate clinical implications	3	5	1	9
Totals	**27**	**41**	**32**	**100**

Open cells show an examination could include items from indicated cognitive levels. Shaded cells prevent appearance of items on examinations.

	Recall	Application	Analysis
I. INSTRUMENTATION / EQUIPMENT	**7**	**10**	**8**
A. Set Up, Maintain, and Calibrate	**2**	**4**	**3**
1. Blood gas analyzers			
2. Spirometers (e.g., diagnostic, screening)			
3. Peak flow meters			
4. Aerosol delivery devices (e.g., bronchodilator/bronchial challenge, dosimeters)			
5. Metered dose or dry powder inhalers			
6. Valves (e.g., directional, demand)			
7. Gas analyzers			
a. oxygen analyzers (e.g., paramagnetic, polarographic, fuel cell)			
b. nitrogen analyzers			
8. Gas delivery systems (e.g., blenders, flowmeters)			
9. Pressure measuring devices (e.g., manometers, transducers, strain gauges)			
10. Gas and water absorbers (e.g., Drierite®, Permapure® tubing)			
11. Plethysmographs			
12. Exercise equipment (e.g., treadmill, cycle or arm ergometer)			
13. Emergency management equipment (e.g., defibrillator, crash cart)			
14. Monitors			
a. 12-lead ECG			
b. pulse oximeters			
c. blood pressure (e.g., manual cuff, automated)			
15. Arterial/venous blood collection equipment			
16. Information management equipment (e.g., computers, interfaces, modems, networks, printers, security)			
17. Quality control devices (e.g., calibration syringes, manometers, isothermal bottle)			
18. Gas exchange validation device or D_{LCO} simulator			
19. Infection control materials/methods (e.g., sterilization devices, gowns, gloves, masks, filters)			
B. Troubleshoot	**2**	**3**	**4**
1. Blood gas analyzers			
2. CO-oximeters/hemoximeters			
3. Spirometers (e.g., diagnostic, screening)			
4. Peak flow meters			
5. Aerosol delivery devices (e.g., bronchodilator/bronchial challenge, dosimeters)			
6. Metered dose or dry powder inhalers			

* The number in each column is the number of items in that content area and cognitive level contained in each examination. Specified items in each section could be asked relative to any tasks listed.

	Recall	Application	Analysis
7. Valves (e.g., directional, demand)			
8. Gas analyzers			
a. oxygen analyzers (e.g., paramagnetic, polarographic, fuel cell)			
b. nitrogen analyzers			
9. Gas delivery systems (e.g., blenders, flowmeters)			
10. Pressure measuring devices (e.g., manometers, transducers, strain gauges)			
11. Gas and water absorbers (e.g., Drierite®, Permapure® tubing)			
12. Plethysmographs			
13. Exercise equipment (e.g., treadmill, cycle or arm ergometer)			
14. Emergency management equipment (e.g., defibrillator, crash cart)			
15. Monitors			
a. 3-lead rhythm ECG			
b. 12-lead ECG			
c. pulse oximeters			
d. blood pressure (e.g., manual cuff, automated)			
16. Arterial/venous blood collection equipment			
17. Information management equipment (e.g., computers, interfaces, modems, networks, printers, security)			
18. Quality control devices (e.g., calibration syringes, manometers, isothermal bottle)			
19. Gas exchange validation device or D_{LCO} simulator			
20. Infection control materials/methods (e.g., sterilization devices, gowns, gloves, masks, filters)			
C. Perform Quality Control	**3**	**3**	**1**
1. Blood gas analyzers			
2. CO-oximeters/hemoximeters			
3. Spirometers (e.g., diagnostic, screening)			
4. Peak flow meters			
5. Aerosol delivery devices (e.g., bronchodilator/bronchial challenge, dosimeters)			
6. Gas analyzers			
a. oxygen analyzers (e.g., paramagnetic, polarographic, fuel cell)			
b. nitrogen analyzers			
7. Plethysmographs			
8. Exercise equipment (e.g., treadmill, cycle or arm ergometer)			
9. Monitors			
a. 12-lead ECG			
b. pulse oximeters			
c. blood pressure (e.g., manual cuff, automated)			
10. Gas exchange validation device or D_{LCO} simulator			
II. PROCEDURES	**10**	**19**	**21**
A. Select Test Protocols and Equipment	**2**	**5**	**3**
1. Bronchodilator delivery (e.g., MDI, DPI, small volume nebulizers)			
2. Arterial blood sample collection			
3. Sputum sample collection (e.g., throat swab, induced, suctioning, cough)			
4. Blood gas analysis (e.g., pH, pO_2, pCO_2)			
5. CO-oximetry/hemoximetry (e.g., CaO_2, SaO_2, COHb)			
6. Spirometry (e.g., VC, FVC, FEV_1, MVV, flow-volume loop)			
7. Static lung volumes (e.g., FRC, RV, TLC)			
a. gas dilution methods (e.g., N_2, He)			
b. body plethysmography (e.g., body box)			
8. Lung diffusion studies (D_{LCO})			
9. Home testing (e.g., spirometry, peak flow, patient education, set-up, and evaluation)			
10. Oxygen prescription at rest			
11. Smoking cessation counseling			
12. Patient education (e.g., medication use, travel, nutrition, asthma)			
13. Exercise (stress) testing			
a. oxygen titration			
b. timed walking test (e.g., 6 MWT)			
c. monitored (e.g., ECG, blood pressure, SpO_2)			
d. with blood gas analysis			
e. inspiratory capacity, flow-volume loops			
14. CPR			

	Recall	Application	Analysis
15. Noninvasive blood pressure monitoring			
16. ECG analysis (e.g., arrhythmia, rate, pattern)			
17. Pulse oximetry			
18. Airway response			
a. bronchodilation studies			
b. bronchial provocation studies (e.g., methacholine)			
c. exercise induced bronchospasm evaluation			
19. Airways resistance/conductance analyses by plethysmography			
20. Maximal inspiratory/expiratory pressures (e.g., MIP, MEP)			
21. Laboratory safety (e.g., electrical, mechanical, infectious)			
22. Quality control procedures			
a. mechanical			
b. biologic			
23. Patient safety			
a. standard precautions			
b. adverse events or incidents (e.g., medication errors, falls)			
B. Perform Procedure	**4**	**7**	**12**
1. Bronchodilator delivery (e.g., MDI, DPI, small volume nebulizers)			
2. Arterial blood sample collection			
3. Sputum sample collection (e.g., throat swab, induced, suctioning, cough)			
4. Blood gas analysis (e.g., pH, pO_2, pCO_2)			
5. CO-oximetry/hemoximetry (e.g., CaO_2, SaO_2, COHb)			
6. Spirometry (e.g., VC, FVC, FEV_1, MVV, flow-volume loop)			
7. Static lung volumes (e.g., FRC, RV, TLC)			
a. gas dilution methods (e.g., N_2, He)			
b. body plethysmography (e.g., body box)			
8. Lung diffusion studies (D_{LCO})			
9. Home testing (e.g., spirometry, peak flow, patient education, set-up, and evaluation)			
10. Oxygen prescription at rest			
11. Smoking cessation counseling			
12. Patient education (e.g., medication use, travel, nutrition, asthma)			
13. Exercise (stress) testing			
a. oxygen titration			
b. timed walking test (e.g., 6 MWT)			
c. monitored (e.g., ECG, blood pressure, SpO_2)			
d. with blood gas analysis			
e. inspiratory capacity, flow-volume loops			
14. CPR			
15. Noninvasive blood pressure monitoring			
16. ECG analysis (e.g., arrhythmia, rate, pattern)			
17. Pulse oximetry			
18. Airway response			
a. bronchodilation studies			
b. bronchial provocation studies (e.g., methacholine)			
c. exercise induced bronchospasm evaluation			
19. Airways resistance/conductance analyses by plethysmography			
20. Maximal inspiratory/expiratory pressures (e.g., MIP, MEP)			
21. Laboratory safety (e.g., electrical, mechanical, infectious)			
22. Quality control procedures			
a. mechanical			
b. biologic			
23. Patient safety			
a. standard precautions			
b. adverse events or incidents (e.g., medication errors, falls)			
C. Evaluate Validity of the Results	**4**	**7**	**6**
1. Bronchodilator delivery (e.g., MDI, DPI, small volume nebulizers)			
2. Arterial blood sample collection			
3. Sputum sample collection (e.g., throat swab, induced, suctioning, cough)			
4. Blood gas analysis (e.g., pH, pO_2, pCO_2)			
5. CO-oximetry/hemoximetry (e.g., CaO_2, SaO_2, COHb)			
6. Spirometry (e.g., VC, FVC, FEV_1, MVV, flow-volume loop)			

	Recall	Application	Analysis
7. Static lung volumes (e.g., FRC, RV, TLC)			
a. gas dilution methods (e.g., N_2, He)			
b. body plethysmography (e.g., body box)			
8. Lung diffusion studies (D_{LCO})			
9. Home testing (e.g., spirometry, peak flow, patient education, set-up, and evaluation)			
10. Oxygen prescription at rest			
11. Smoking cessation counseling			
12. Patient education (e.g., medication use, travel, nutrition, asthma)			
13. Exercise (stress) testing			
a. oxygen titration			
b. timed walking test (e.g., 6 MWT)			
c. monitored (e.g., ECG, blood pressure, SpO_2)			
d. with blood gas analysis			
e. inspiratory capacity, flow-volume loops			
14. CPR			
15. Noninvasive blood pressure monitoring			
16. ECG analysis (e.g., arrhythmia, rate, pattern)			
17. Pulse oximetry			
18. Airway response			
a. bronchodilation studies			
b. bronchial provocation studies (e.g., methacholine)			
c. exercise induced bronchospasm evaluation			
19. Airways resistance/conductance analyses by plethysmography			
20. Maximal inspiratory/expiratory pressures (e.g., MIP, MEP)			
21. Laboratory safety (e.g., electrical, mechanical, infectious)			
22. Quality control procedures			
a. mechanical			
b. biologic			
23. Patient safety			
a. standard precautions			
b. adverse events or incidents (e.g., medication errors, falls)			
III. DATA MANAGEMENT	**10**	**12**	**3**
A. Calculate Results, Reference Ranges, and Select Data	**3**	**4**	**1**
1. Documentation (e.g., JCAHO, ATS/ERS guidelines, HIPAA)			
2. Measured and calculated blood gas results (e.g., pH, PCO_2, PO_2, HCO_3^-, A-aDO_2, base excess)			
3. Measured and calculated CO-oximetry/hemoximetry results (Hb, O_2Hb, COHb, MetHb)			
4. Spirometry data (e.g., VC, FVC, FEV_1, MVV, flow-volume loops)			
5. Static lung volumes (e.g., FRC, RV, TLC)			
a. gas dilution data (e.g., N_2, He)			
b. body plethysmography data (e.g., body box)			
6. Lung diffusion studies (D_{LCO})			
7. Home pulmonary function data (e.g., spirometry, peak flow)			
8. Exercise (stress) test data			
a. oxygen titration			
b. timed walking test (e.g., 6 MWT)			
c. monitored (e.g., ECG, blood pressure, SpO_2)			
d. with blood gas analysis			
e. inspiratory capacity, flow-volume loops			
9. Noninvasive blood pressure monitoring			
10. ECG analysis (e.g., arrhythmia, rate, pattern)			
11. Pulse oximetry			
12. Airway response			
a. bronchodilation studies			
b. bronchial provocation studies (e.g., methacholine)			
c. exercise induced bronchospasm evaluation			
13. Airways resistance/conductance analyses by plethysmography			
14. Maximal inspiratory/expiratory pressures (e.g., MIP, MEP)			
15. Laboratory safety (e.g., electrical, mechanical, infectious)			
16. Quality control procedures			
a. mechanical			
b. biologic			

	Recall	Application	Analysis
17. Patient safety			
a. standard precautions			
b. adverse events or incidents (e.g., medication errors, falls)			
18. Statistical and graphical methods (e.g., means, standard deviations, confidence intervals) for quality control			
19. Patient pulmonary function trending data			
20. Clinical history and demographics (e.g., height, weight, age, race, gender, smoking and occupational history, vital signs, medical/surgical history, medications, respiratory care)			
21. Laboratory quality management			
a. inventory control			
b. patient satisfaction			
c. client satisfaction (e.g., referral physician)			
d. equipment (e.g., purchasing, service contracts, preventive maintenance)			
e. information (e.g., software upgrades, backup)			
f. documentation, records			
B. Evaluate Reliability of Results	**4**	**3**	**1**
1. Measured and calculated blood gas results (e.g., pH, PCO_2, PO_2, HCO_3^-, A-aDO_2, base excess)			
2. Measured and calculated CO-oximetry/hemoximetry results (Hb, O_2Hb, COHb, MetHb)			
3. Spirometry data (e.g., VC, FVC, FEV_1, MVV, flow-volume loops)			
4. Static lung volumes (e.g., FRC, RV, TLC)			
a. gas dilution data (e.g., N_2, He)			
b. body plethysmography data (e.g., body box)			
5. Lung diffusion studies (D_{LCO})			
6. Home pulmonary function data (e.g., spirometry, peak flow)			
7. Exercise (stress) test data			
a. oxygen titration			
b. timed walking test (e.g., 6 MWT)			
c. monitored (e.g., ECG, blood pressure, SpO_2)			
d. with blood gas analysis			
e. inspiratory capacity, flow-volume loops			
8. Noninvasive blood pressure monitoring			
9. ECG analysis (e.g., arrhythmia, rate, pattern)			
10. Pulse oximetry			
11. Airway response			
a. bronchodilation studies			
b. bronchial provocation studies (e.g., methacholine)			
c. exercise induced bronchospasm evaluation			
12. Airways resistance/conductance analyses by plethysmography			
13. Maximal inspiratory/expiratory pressures (e.g., MIP, MEP)			
14. Laboratory safety (e.g., electrical, mechanical, infectious)			
15. Quality control procedures			
a. mechanical			
b. biologic			
16. Patient safety			
a. standard precautions			
b. adverse events or incidents (e.g., medication errors, falls)			
17. Statistical and graphical methods (e.g., means, standard deviations, confidence intervals) for quality control			
18. Patient pulmonary function trending data			
19. Clinical history and demographics (e.g., height, weight, age, race, gender, smoking and occupational history, vital signs, medical/surgical history, medications, respiratory care)			
20. Laboratory quality management			
a. inventory control			
b. patient satisfaction			
c. client satisfaction (e.g., referral physician)			
d. equipment (e.g., purchasing, service contracts, preventive maintenance)			
e. information (e.g., software upgrades, backup)			
f. documentation, records			
C. Evaluate Clinical Implications	**3**	**5**	**1**
1. Measured and calculated blood gas results (e.g., pH, PCO_2, PO_2, HCO_3^-, A-aDO_2, base excess)			
2. Measured and calculated CO-oximetry/hemoximetry results (Hb, O_2Hb, COHb, MetHb)			
3. Spirometry data (e.g., VC, FVC, FEV_1, MVV, flow-volume loops)			

	Recall	Application	Analysis
4. Static lung volumes (e.g., FRC, RV, TLC)			
a. gas dilution data (e.g., N_2, He)			
b. body plethysmography data (e.g., body box)			
5. Lung diffusion studies (D_{LCO})			
6. Home pulmonary function data (e.g., spirometry, peak flow)			
7. Exercise (stress) test data			
a. oxygen titration			
b. timed walking test (e.g., 6 MWT)			
c. monitored (e.g., ECG, blood pressure, SpO_2)			
d. with blood gas analysis			
e. inspiratory capacity, flow-volume loops			
8. Noninvasive blood pressure monitoring			
9. ECG analysis (e.g., arrhythmia, rate, pattern)			
10. Pulse oximetry			
11. Airway response			
a. bronchodilation studies			
b. bronchial provocation studies (e.g., methacholine)			
c. exercise induced bronchospasm evaluation			
12. Airways resistance/conductance analyses by plethysmography			
13. Maximal inspiratory/expiratory pressures (e.g., MIP, MEP)			
14. Laboratory safety (e.g., electrical, mechanical, infectious)			
15. Quality control procedures			
a. mechanical			
b. biologic			
16. Patient safety			
a. standard precautions			
b. adverse events or incidents (e.g., medication errors, falls)			
17. Statistical and graphical methods (e.g., means, standard deviations, confidence intervals) for quality control			
18. Patient pulmonary function trending data			
19. Clinical history and demographics (e.g., height, weight, age, race, gender, smoking and occupational history, vital signs, medical/surgical history, medications, respiratory care)			
20. Laboratory quality management			
a. inventory control			
b. patient satisfaction			
c. client satisfaction (e.g., referral physician)			
Totals	**27**	**41**	**32**

Registry Examination for Advanced Pulmonary Function Technologists (RPFT)

RPFT Examination Matrix

Content Area	Cognitive Level: Recall	Application	Analysis	Number of Items
I. Instrumentation/Equipment	**3**	**8**	**14**	**25**
A. Set up, maintain, calibrate	1	2	4	7
B. Troubleshoot	1	2	6	9
C. Perform quality control	1	4	4	9
II. Procedures	**1**	**5**	**24**	**30**
A. Select test protocols and equipment	0	1	7	8
B. Perform procedure	0	2	8	10
C. Evaluate validity of the results	1	2	9	12
III. Data Management	**2**	**18**	**25**	**45**
A. Calculate results, reference ranges, and select data	0	7	6	13
B. Evaluate reliability of results	1	7	7	15
C. Evaluate clinical implications	1	4	12	17
Totals	**6**	**31**	**63**	**100**

Open cells show an examination could include items from indicated cognitive levels. Shaded cells prevent appearance of items on examinations.

	Recall	Application	Analysis
I. INSTRUMENTATION / EQUIPMENT	**3**	**8**	**14**
A. Set Up, Maintain, and Calibrate	**1**	**2**	**4**
1. Blood gas analyzers	■	■	
2. Valves (e.g., directional, demand)	■	■	
3. Gas analyzers	■	■	■
a. infrared analyzers (e.g., CO_2, CO, CH_4)			
b. oxygen analyzers (e.g., paramagnetic, polarographic, fuel cell)	■	■	
c. nitrogen analyzers	■	■	
4. Gas delivery systems (e.g., blenders, flowmeters)	■	■	
5. Pressure measuring devices (e.g., manometers, transducers, strain gauges)	■	■	
6. Recording devices (e.g., strip chart, X-Y)			■
7. Plethysmographs	■	■	
8. Exercise equipment (e.g., treadmill, cycle or arm ergometer)	■	■	
9. Metabolic measurement systems for exercise testing			
10. Information management equipment (e.g., computers, interfaces, modems, networks, printers, security)	■	■	
11. Quality control devices (e.g., calibration syringes, manometers, isothermal bottle)	■	■	
12. Gas exchange validation device or D_{LCO} simulator	■		
B. Troubleshoot	**1**	**2**	**6**
1. Blood gas analyzers	■	■	
2. CO-oximeters/hemoximeters	■	■	
3. Valves (e.g., directional, demand)	■	■	
4. Gas analyzers	■	■	■
a. infrared analyzers (e.g., CO_2, CO, CH_4)			
b. oxygen analyzers (e.g., paramagnetic, polarographic, fuel cell)	■	■	
c. nitrogen analyzers	■	■	
5. Gas delivery systems (e.g., blenders, flowmeters)	■	■	
6. Pressure measuring devices (e.g., manometers, transducers, strain gauges)	■	■	
7. Recording devices (e.g., strip chart, X-Y)			■
8. Plethysmographs	■	■	
9. Exercise equipment (e.g., treadmill, cycle or arm ergometer)	■		
10. Metabolic measurement systems for exercise testing			
11. Information management equipment (e.g., computers, interfaces, modems, networks, printers, security)	■	■	
12. Quality control devices (e.g., calibration syringes, manometers, isothermal bottle)	■	■	
13. Gas exchange validation device or D_{LCO} simulator	■		

* The number in each column is the number of items in that content area and cognitive level contained in each examination. Specified items in each section could be asked relative to any tasks listed.

	Recall	Application	Analysis
C. Perform Quality Control	**1**	**4**	**4**
1. Blood gas analyzers			
2. CO-oximeters/hemoximeters			
3. Aerosol delivery devices (e.g., bronchodilator/bronchial challenge, dosimeters)			
4. Gas analyzers			
a. infrared analyzers (e.g., CO_2, CO, CH_4)			
b. oxygen analyzers (e.g., paramagnetic, polarographic, fuel cell)			
c. nitrogen analyzers			
5. Plethysmographs			
6. Exercise equipment (e.g., treadmill, cycle or arm ergometer)			
7. Metabolic measurement systems for exercise testing			
8. Monitors			
a. 12-lead ECG			
b. pulse oximeters			
c. blood pressure (e.g., manual cuff, automated)			
9. Gas exchange validation device or D_{LCO} simulator			
II. PROCEDURES	**1**	**5**	**24**
A. Select Test Protocols and Equipment	**0**	**1**	**7**
1. Blood gas analysis (e.g., pH, pO_2, pCO_2)			
2. CO-oximetry/hemoximetry (e.g., CaO_2, SaO_2, COHb)			
3. Smoking cessation counseling			
4. Patient education (e.g., medication use, travel, nutrition, asthma)			
5. Exercise (stress) testing			
a. with blood gas analysis			
b. inspiratory capacity, flow-volume loops			
6. Airway response			
a. bronchial provocation studies (e.g., methacholine)			
b. exercise induced bronchospasm evaluation			
7. Airways resistance/conductance analyses by plethysmography			
8. Quality control procedures			
a. mechanical			
b. biologic			
B. Perform Procedure	**0**	**2**	**8**
1. End Tidal CO_2			
2. Home testing (e.g., spirometry, peak flow, patient education, set-up, and evaluation)			
3. Smoking cessation counseling			
4. Patient education (e.g., medication use, travel, nutrition, asthma)			
5. Exercise (stress) testing			
a. monitored (e.g., ECG, blood pressure, SpO_2)			
b. with blood gas analysis			
c. inspiratory capacity, flow-volume loops			
6. ECG analysis (e.g., arrhythmia, rate, pattern)			
7. Airway response			
a. bronchial provocation studies (e.g., methacholine)			
b. exercise induced bronchospasm evaluation			
8. Airways resistance/conductance analyses by plethysmography			
9. Quality control procedures			
a. mechanical			
b. biologic			
C. Evaluate Validity of the Results	**1**	**2**	**9**
1. End Tidal CO_2			
2. Home testing (e.g., spirometry, peak flow, patient education, set-up, and evaluation)			
3. Smoking cessation counseling			
4. Patient education (e.g., medication use, travel, nutrition, asthma)			
5. Exercise (stress) testing			
a. oxygen titration			
b. timed walking test (e.g., 6 MWT)			
c. monitored (e.g., ECG, blood pressure, SpO_2)			
d. with blood gas analysis			
e. inspiratory capacity, flow-volume loops			

	Recall	Application	Analysis
6. Noninvasive blood pressure monitoring			
7. ECG analysis (e.g., arrhythmia, rate, pattern)			
8. Airway response			
a. bronchial provocation studies (e.g., methacholine)			
b. exercise induced bronchospasm evaluation			
9. Airways resistance/conductance analyses by plethysmography			
10. Quality control procedures			
a. mechanical			
b. biologic			
III. DATA MANAGEMENT	**2**	**18**	**25**
A. Calculate Results, Reference Ranges, and Select Data	**0**	**7**	**6**
1. Documentation (e.g., JCAHO, ATS/ERS guidelines, HIPAA)			
2. Home pulmonary function data (e.g., spirometry, peak flow)			
3. Exercise (stress) test data			
a. monitored (e.g., ECG, blood pressure, SpO_2)			
b. with blood gas analysis			
c. inspiratory capacity, flow-volume loops			
4. Airway response			
a. bronchial provocation studies (e.g., methacholine)			
b. exercise induced bronchospasm evaluation			
5. Airways resistance/conductance analyses by plethysmography			
6. Laboratory safety (e.g., electrical, mechanical, infectious)			
7. Quality control procedures			
a. mechanical			
b. biologic			
8. Patient safety			
a. standard precautions			
b. adverse events or incidents (e.g., medication errors, falls)			
9. Statistical and graphical methods (e.g., means, standard deviations, confidence intervals) for quality control			
10. Patient pulmonary function trending data			
11. Laboratory quality management			
a. inventory control			
b. patient satisfaction			
c. client satisfaction (e.g., referral physician)			
d. equipment (e.g., purchasing, service contracts, preventive maintenance)			
e. information (e.g., software upgrades, backup)			
f. documentation, records			
B. Evaluate Reliability of Results	**1**	**7**	**7**
1. Measured and calculated blood gas results (e.g., pH, PCO_2, PO_2, HCO_3^-, A-aDO_2, base excess)			
2. Measured and calculated CO-oximetry/hemoximetry results (Hb, O_2Hb, COHb, MetHb)			
3. Static lung volumes (e.g., FRC, RV, TLC)			
a. gas dilution data (e.g., N_2, He)			
b. body plethysmography data (e.g., body box)			
4. Lung diffusion studies (D_{LCO})			
5. Home pulmonary function data (e.g., spirometry, peak flow)			
6. Exercise (stress) test data			
a. monitored (e.g., ECG, blood pressure, SpO_2)			
b. with exhaled gas analysis (e.g., $\dot{V}O_{2max}$ anaerobic threshold, $\dot{V}O_2$, $\dot{V}CO_2$, $\dot{V}_E$)			
c. with blood gas analysis			
d. inspiratory capacity, flow-volume loops			
7. Noninvasive blood pressure monitoring			
8. Airway response			
a. bronchial provocation studies (e.g., methacholine)			
b. exercise induced bronchospasm evaluation			
9. Airways resistance/conductance analyses by plethysmography			
10. Laboratory safety (e.g., electrical, mechanical, infectious)			
11. Quality control procedures			
a. mechanical			
b. biologic			

	Recall	Application	Analysis
12. Patient safety	■	■	■
a. standard precautions	■		■
b. adverse events or incidents (e.g., medication errors, falls)	■		
13. Statistical and graphical methods (e.g., means, standard deviations, confidence intervals) for quality control	■		
14. Patient pulmonary function trending data	■		
15. Clinical history and demographics (e.g., height, weight, age, race, gender, smoking and occupational history, vital signs, medical/surgical history, medications, respiratory care)	■	■	
16. Laboratory quality management	■	■	■
a. inventory control	■		■
b. patient satisfaction	■		■
c. client satisfaction (e.g., referral physician)	■		■
d. equipment (e.g., purchasing, service contracts, preventive maintenance)	■		■
e. information (e.g., software upgrades, backup)	■		■
f. documentation, records	■		■
C. Evaluate Clinical Implications	**1**	**4**	**12**
1. Measured and calculated blood gas results (e.g., pH, PCO_2, PO_2, HCO_3^-, A-aDO_2, base excess)	■	■	
2. Measured and calculated CO-oximetry/hemoximetry results (Hb, O_2Hb, COHb, MetHb)	■	■	
3. Spirometry data (e.g., VC, FVC, FEV_1, MVV, flow-volume loops)	■	■	
4. Static lung volumes (e.g., FRC, RV, TLC)	■	■	■
a. gas dilution data (e.g., N_2, He)	■	■	
b. body plethysmography data (e.g., body box)	■	■	
5. Lung diffusion studies (D_{LCO})	■	■	
6. Home pulmonary function data (e.g., spirometry, peak flow)	■		
7. Exercise (stress) test data	■	■	■
a. oxygen titration	■	■	
b. timed walking test (e.g., 6 MWT)	■	■	
c. monitored (e.g., ECG, blood pressure, SpO_2)	■	■	
d. with exhaled gas analysis (e.g., $\dot{V}O_{2max}$ anaerobic threshold, $\dot{V}O_2$, $\dot{V}CO_2$, $\dot{V}_E$)			
e. with blood gas analysis	■		
f. inspiratory capacity, flow-volume loops	■		
8. Noninvasive blood pressure monitoring	■	■	
9. ECG analysis (e.g., arrhythmia, rate, pattern)	■	■	
10. Airway response	■	■	
a. bronchodilation studies	■	■	
b. bronchial provocation studies (e.g., methacholine)	■		
c. exercise induced bronchospasm evaluation	■		
11. Airways resistance/conductance analyses by plethysmography	■		
12. Maximal inspiratory/expiratory pressures (e.g., MIP, MEP)	■	■	
13. Quality control procedures	■	■	■
a. mechanical	■		
b. biologic	■		
14. Statistical and graphical methods (e.g., means, standard deviations, confidence intervals) for quality control	■		
15. Patient pulmonary function trending data	■	■	
16. Clinical history and demographics (e.g., height, weight, age, race, gender, smoking and occupational history, vital signs, medical/surgical history, medications, respiratory care)	■	■	
17. Laboratory quality management	■	■	■
a. inventory control	■	■	
b. patient satisfaction	■	■	
c. client satisfaction (e.g., referral physician)	■	■	
Totals	**6**	**31**	**63**

Completing Your Application

Certification Examination for Entry-Level Respiratory Therapists (CRT)

The following instructions are provided to help you complete your application when applying for the **Certification Examination for Entry-Level Respiratory Therapists (CRT).** Read the admission policies for this examination to be sure you qualify. Identify your status from one of the candidate categories listed in bold type below, print off the CRT Examination application, and follow the instructions provided:

STEP 1: Select the examination for which you are applying and the application fee from Section I: EXAMINATION INFORMATION on the application form.

If you are applying as a reapplicant, or are applying to retake the examination to comply with CCP requirements, or to regain eligibility for another examination:

A. Complete Sections I, II, III, and VII.
B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.
C. Indicate your status in Section III: ELIGIBILITY STATUS (check box 2, 4, or 5).

If you are applying as a graduate from an accredited education program with a minimum of an associate degree:

A. Complete Sections I, II, III, IV, and VII.
B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.
C. Indicate your status in Section III A: CRT EXAMINATION ELIGIBILITY (check box 1 or 2).
D. Note Section IV: EDUCATION INFORMATION. Please specify the exact date (month, day, year) you began and completed an accredited respiratory therapy education program. Print the program's CoARC (previously JRCRTE) number in the space provided. You must obtain the six-digit CoARC number from the accredited respiratory therapy education program from which you graduated.
E. Enclose an official copy of your transcripts* from an accredited respiratory therapy education program.

If you are applying as a graduate from an accredited education program in an institution offering a baccalaureate degree and have been awarded a special certificate of completion approved by the CoARC:

A. Complete Sections I, II, III, IV, and VII.
B. Note Section I: EXAMINATION INFORMATION. Check the box indicating an examination fee enclosed with your application.
C. Indicate your status in Section III A: CRT EXAMINATION ELIGIBILITY (check box 3).
D. Note Section IV: EDUCATION INFORMATION. Please specify the exact date (month, day, year) you began your accredited respiratory therapy education program. Print the program's CoARC (previously JRCRTE) number in the space provided. You must obtain the six-digit CoARC number from the accredited respiratory therapy education program in which you enrolled.
E. Enclose an official copy* of your special certificate of completion from an accredited respiratory therapy education program.

If you are applying as a candidate for voluntary recredentialing:

A. Complete Sections I, II, III, and VII.
B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.
C. Indicate your status in Section III: ELIGIBILITY STATUS (check box 3).

*NOTE: Most colleges will not release official transcripts to students. If you cannot obtain official transcripts to enclose with your application, instruct your school to send your transcripts to the NBRC. Neither unofficial or student transcripts, nor letters will be accepted as verification of college semester hours completed.

Registry Examination for Advanced Respiratory Therapists (RRT)

The following instructions are provided to help you complete your application when applying for the **Registry Examination for Advanced Respiratory Therapists (RRT)**. Read the admission policies for this application to be sure you qualify. Identify your status from one of the candidate categories listed in bold type below, print off the RRT Examination application, and follow the instructions provided:

STEP 1: Select the examination for which you are applying and the application fee from Section I: EXAMINATION INFORMATION on the application form.

If you are applying as a reapplicant or are applying to retake the examination to comply with CCP requirements:

A. Complete Sections I, II, III, and VII.
B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.
C. Indicate your status in Section III: ELIGIBILITY STATUS (check box 2 or 4).

If you are a graduate of an accredited, advanced-level respiratory therapist education program with a minimum of an associate degree:

A. Complete Sections I, II, III, IV, and VII.
B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.
C. Indicate your status in Section III B: RRT EXAMINATION ELIGIBILITY (check box 1).
D. Note Section IV: EDUCATION INFORMATION. Please specify the exact date (month, day, year) you began and completed an accredited respiratory therapist education program. Print the program's CoARC (previously JRCRTE) number in the space provided. You must obtain the six-digit CoARC number from the accredited respiratory therapy education program from which you graduated. You are not required to complete Section IV B.
E. Enclose official transcripts* from an accredited respiratory therapist education program.
F. If you hold a minimum of an associate degree from an advanced-level program, you MUST apply as such and are not eligible to apply under another route of eligibility.

If you are a graduate from an accredited education program in an institution offering a baccalaureate degree and have been awarded a special certificate of completion approved by the CoARC:

A. Complete Sections I, II, III, IV, and VII.
B. Note Section I: EXAMINATION INFORMATION. Check the box indicating an examination fee enclosed with your application.
C. Indicate your status in Section III B: RRT EXAMINATION ELIGIBILITY (check box 2).
D. Note Section IV: EDUCATION INFORMATION. Please specify the exact date (month, day, year) you began your accredited respiratory therapy education program. Print the program's CoARC (previously JRCRTE) number in the space provided. You must obtain the six-digit CoARC number from the accredited respiratory therapy education program in which you enrolled. You are not required to complete Section IV B.
E. Enclose an official copy* of your special certificate of completion from an accredited respiratory therapy education program.

If you are applying as a CRT with four years of full-time clinical experience in respiratory care under licensed medical supervision following Certification prior to applying for the examination and in addition, have completed 62 semester hours of college credit including courses in anatomy/physiology, microbiology, chemistry, physics, and mathematics:**

A. Complete Sections I, II, III, IV, V, VI, and VII.
B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.
C. Indicate your status in Section III B: RRT EXAMINATION ELIGIBILITY (check box 1 under CRT-to-Registry Provision).
D. Note Section IV: EDUCATION INFORMATION. Please indicate colleges or universities attended and dates of attendance and graduation. List the courses on your transcripts which reflect your completion of anatomy/physiology, microbiology, chemistry, physics, and mathematics by indicating **course numbers and titles** in Section IV.
E. Note Section V: EMPLOYMENT INFORMATION. Please specify your exact employment dates (month, day, year) which document that you have completed two/four years (depending on eligibility route) of full-time clinical experience in respiratory therapy following Certification. **Clinical experience will be calculated from the date you achieved the CRT credential and must be completed at the time you submit the examination application.**
F. Note Section VI: VERIFICATION OF CLINICAL EXPERIENCE. Your Medical Director must verify your clinical experience by signing in the space provided in Section VI. If Section VI is not signed by your Medical Director, your application will be considered incomplete. **The NBRC reserves the right to confirm the information you provide by independently contacting your Medical Director.**
G. Enclose official transcripts* verifying 62 semester hours of college credit. Your transcripts must also verify completion of anatomy/physiology, microbiology, chemistry, physics, and mathematics.

If you are a graduate of an accredited, entry-level respiratory therapist educational program with a minimum of an associate degree with two years of full-time, clinical experience in respiratory care under licensed medical supervision following Certification and prior to applying for the examination:

A. Complete Sections I, II, III, IV, V, VI, and VII.
B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.
C. Indicate your status in Section III B: RRT EXAMINATION ELIGIBILITY (check box 2 under CRT-to-Registry Provision).
D. Note Section IV: EDUCATION INFORMATION. Please specify the exact date (month, day, year) you began and completed an accredited respiratory therapist education program. Print the program's CoARC (previously JRCRTE) number in the space provided. You must obtain the six-digit CoARC number from the accredited respiratory therapy education program from which you graduated. You are not required to complete Section IV B.
E. Note Section V: EMPLOYMENT INFORMATION. Please specify your exact employment dates (month, day, year) which document that you have completed two years of full-time clinical experience in respiratory therapy following Certification. **Clinical experience will be calculated from the date you achieved the CRT credential and must be completed at the time you submit the examination application.**
F. Note Section VI: VERIFICATION OF CLINICAL EXPERIENCE. Your Medical Director must verify your clinical experience by signing in the space provided in Section VI. If Section VI is

not signed by your Medical Director, your application will be considered incomplete. **The NBRC reserves the right to confirm the information you provide by independently contacting your Medical Director.**

G. Enclose official transcripts* from an accredited respiratory therapist education program.

If you are a CRT with a baccalaureate degree in an area other than respiratory care, including credit for college level courses in anatomy/physiology, chemistry, mathematics, microbiology, and physics, and in addition, you have two years of clinical experience in respiratory therapy following Certification and before applying for the examination:

A. Complete Sections I, II, III, IV, V, VI, and VII.

B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.

C. Indicate your status in Section III B: RRT EXAMINATION ELIGIBILITY (check box 3 under CRT-to-Registry Provision).

D. Note Section IV: EDUCATION INFORMATION. Enclose an official transcript from the college or university you attended. List the courses on your transcripts which reflect your completion of anatomy/physiology, microbiology, chemistry, physics, and mathematics by indicating **course numbers and titles** in Section IV.

E. Note Section V: EMPLOYMENT INFORMATION. Please specify your exact employment dates (month, day, year) which document that you have completed two years of full-time clinical experience in respiratory therapy following Certification. **Clinical experience will be calculated from the date you achieved the CRT credential and must be completed at the time you submit the examination application.**

F. Note Section VI: VERIFICATION OF CLINICAL EXPERIENCE. Your Medical Director must verify your clinical experience by signing in the space provided in Section VI. If Section VI is not signed by your Medical Director, your application will be considered incomplete. **The NBRC reserves the right to confirm the information you provide by independently contacting your Medical Director.**

G. Enclose official transcripts* verifying 62 semester hours of college credit. Your transcripts must also verify completion of anatomy/physiology, microbiology, chemistry, physics, and mathematics.

If you are applying as a candidate for voluntary recredentialing:

A. Complete Sections I, II, III, and VII.

B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.

C. Indicate your status in Section III: ELIGIBILITY STATUS (check box 3).

*NOTE: Most colleges will not release official transcripts to students. If you cannot obtain official transcripts to enclose with your application, instruct your school to send your transcripts to the NBRC. Neither unofficial or student transcripts, nor letters will be accepted as verification of college semester hours completed.

** Individuals Certified prior to January 1, 1983 are required to complete only three years of clinical experience to be eligible for the Registry Examination. Individuals with a baccalaureate degree in an area other than respiratory care are required to complete only two years of experience.

Neonatal/Pediatric Respiratory Care Specialty Examination

The following instructions are provided to help you complete your application when applying for the **Neonatal/Pediatric Respiratory Care Specialty Examination.** Read the admission policies for this examination to be sure you qualify. Identify your status from one of the candidate categories listed in bold type below, print off the Specialty Examination application, and follow the instructions provided:

STEP 1: Select the examination for which you are applying and the application fee from Section I: EXAMINATION INFORMATION on the application form.

If you are applying as a reapplicant or are applying to retake the examination to comply with CCP requirements:

A. Complete Sections I, II, III, and VII.

B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.

C. Indicate your status in Section III: ELIGIBILITY STATUS (check box 2 or 4).

If you are a Registered Respiratory Therapist (RRT):

A. Complete Sections I, II, III, and VII.

B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.

C. Indicate your status in Section III A: NEONATAL/PEDIATRIC SPECIALTY EXAMINATION ELIGIBILITY (check box 1).

If you are a Certified Respiratory Therapist (CRT) and have twelve months of clinical experience in neonatal/pediatric respiratory care:

A. Complete Sections I, II, III, and VII.

B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.

C. Indicate your status in Section III A: NEONATAL/PEDIATRIC SPECIALTY EXAMINATION ELIGIBILITY (check box 2).

D. Note Section V: EMPLOYMENT INFORMATION. Please specify your exact employment dates (month, day, year) which document that you have completed twelve months of clinical experience in neonatal/pediatric respiratory care following Certification. **Clinical experience will be calculated from the date you achieved the CRT credential and must be completed at the time you submit the credentialing examination application.**

E. Note Section VI: VERIFICATION OF CLINICAL EXPERIENCE. Your Medical Director must verify your clinical experience by signing in the space provided in Section VI. If Section VI is not signed by your Medical Director, your application will be considered incomplete. **The NBRC reserves the right to confirm the information you provide by independently contacting your Medical Director.**

If you are applying as a candidate for voluntary recredentialing:

A. Complete Sections I, II, III, and VII.

B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.

C. Indicate your status in Section III: ELIGIBILITY STATUS (check box 3).

Sleep Disorders Specialty Examination

The following instructions are provided to help you complete your application when applying for the **Sleep Disorders Specialty Examination.** Read the admission policies for this examination to be sure you qualify. Identify your status from one of the candidate categories listed in bold type below, print off the Specialty Examination application, and follow the instructions provided:

STEP 1: Select the examination for which you are applying and the application fee from Section I: EXAMINATION INFORMATION on the application form.

If you are applying as a reapplicant or are applying to retake the examination to comply with CCP requirements:

A. Complete Sections I, II, III, and VII.
B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.
C. Indicate your status in Section III: ELIGIBILITY STATUS (check box 2 or 4).

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If you are a CRT or RRT having completed a CoARC or CAAHEP accredited respiratory therapy program with a sleep add-on track:

A. Complete Sections I, II, III, IV, and VII.
B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.
C. Indicate your status in Section III B: SLEEP DISORDERS SPECIALTY EXAMINATION ELIGIBILITY (check box 1).
D. Note Section IV: EDUCATION INFORMATION. Please specify the exact date (month, day, year) you began and completed an accredited respiratory therapy program. If you graduated from an accredited respiratory therapy education program, print the program's CoARC (previously JRCRTE) number in the space provided. You must obtain the six-digit CoARC number from the accredited respiratory therapy education program from which you graduated.
E. Enclose official transcripts* from an accredited respiratory therapy education program.

If you are a Registered Respiratory Therapist (RRT) and have three months of clinical experience in a sleep diagnostics and treatment setting:

A. Complete Sections I, II, III, V, VI, and VII.
B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.
C. Indicate your status in Section III B: SLEEP DISORDERS SPECIALTY EXAMINATION ELIGIBILITY (check box 2).
D. Note Section V: EMPLOYMENT INFORMATION. Please specify your exact employment dates (month, day, year) which document that you have completed three months of clinical experience in sleep disorders respiratory care following Certification. **Clinical experience must be completed at the time you submit the credentialing examination application.**
E. Note Section VI: VERIFICATION OF CLINICAL EXPERIENCE. Your Medical Director must verify your clinical experience by signing in the space provided in Section VI. If Section VI is not signed by your Medical Director, your application will be considered incomplete. **The NBRC reserves the right to confirm the information you provide by independently contacting your Medical Director.**

If you are a Certified Respiratory Therapist (CRT) and have six months of clinical experience in a sleep diagnostics and treatment setting:

A. Complete Sections I, II, III, V, VI, and VII.
B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.
C. Indicate your status in Section III B: SLEEP DISORDERS SPECIALTY EXAMINATION ELIGIBILITY (check box 3).
D. Note Section V: EMPLOYMENT INFORMATION. Please specify your exact employment dates (month, day, year) which document that you have completed six months of clinical experience in sleep disorders respiratory care following Certification. **Clinical experience must be completed at the time you submit the credentialing examination application.**
E. Note Section VI: VERIFICATION OF CLINICAL EXPERIENCE. Your Medical Director must verify your clinical experience by signing in the space provided in Section VI. If Section VI is not signed by your Medical Director, your application will be considered incomplete. **The NBRC reserves the right to confirm the information you provide by independently contacting your Medical Director.**

If you are applying as a candidate for voluntary recredentialing:

A. Complete Sections I, II, III, and VII.
B. Note Section I: EXAMINATION INFORMATION. Check the box indicating the examination fee enclosed with your application.
C. Indicate your status in Section III: ELIGIBILITY STATUS (check box 3).

*NOTE: Most colleges will not release official transcripts to students. If you cannot obtain official transcripts to enclose with your application, instruct your school to send your transcripts to the NBRC. Neither unofficial or student transcripts, nor letters will be accepted as verification of college semester hours completed.