

NBRC

Exam RPFT

Registry Examination for Advanced Pulmonary Function Technologists

Version: 6.0

[Total Questions: 111]

Question No : 1

Using a peak flowmeter, a pulmonary function technologist obtains the following:

<u>Trial</u>	<u>Flow (L/min)</u>
1	850
2	650
3	750

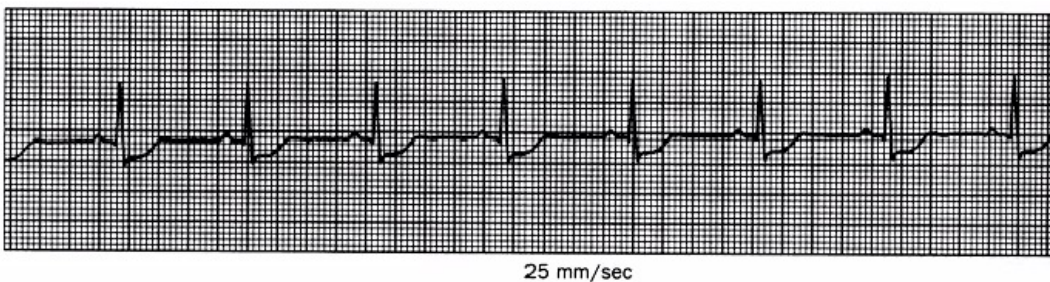
The technologist should

- A. Conclude that bronchodilatation has occurred.
- B. Report the average of the two best efforts.
- C. Perform at least one more peak flow trial.
- D. Report the patient's peak flow as 750 L/min.

Answer: C

Question No : 2

A 54-year-old male with a normal ECG at rest develops dyspnea during an exercise (stress) test, and the following ECG pattern is noted at 25 watts:



25 mm/sec A pulmonary function technologist should

- A. Continue the test until the subject reaches target heart rate.
- B. Stop the test immediately; there is evidence of heart block.
- C. Continue the test and obtain an arterial blood sample.
- D. Stop the test immediately; there is evidence of ischemia.

Answer: B

Question No : 3

A polarographic oxygen analyzer used to measure expired gas in a metabolic system should always be calibrated with

- A. Gas concentrations higher and lower than the expected measurement
- B. Oxygen mixtures containing 4% and 8% carbon dioxide
- C. 100% oxygen and 100% nitrogen, fully saturated
- D. Air and fully saturated 100% oxygen.

Answer: A

Question No : 4

Successive peak flow measurements made with a peak flowmeter on a subject previously diagnosed as having asthma yield the following results:

Trial 1	6.27 L/sec
Trial 2	5.07 L/sec
Trial 3	4.38 L/sec

Which of the following is the best explanation for these?

- A. Condensation of moisture in the peak flowmeter
- B. Normal response
- C. Improper calibration of the peak flowmeter
- D. Increasing airways resistance in the subject

Answer: D

Question No : 5

A patient with severe airflow limitation pants too rapidly (> 3 breaths/second) against a

closed shutter in a body plethysmograph. Which of the following will occur?

- A. VTGunderestimation
- B. VTGoverestimation
- C. RAWunderestimation
- D. RAWoverestimation

Answer: D

Question No : 6



The ECG above is recorded during the recovery phase immediately following termination of an ergo meter exercise study. A pulmonary function technologist should

- A. Initiate chest compressions
- B. Have the patient lie down
- C. Check the electrode connections
- D. Continue the cool-down phase

Answer: A

Question No : 7

A treadmill is set so that the belt rises 1 ft in a horizontal distance of 10 ft at 3 mph. The percent grade indicator should read

- A. 30.0%
- B. 1.0%
- C. 3.0%

D. 10.0%

Answer: C

Question No : 8

Which of the following is a suitable policy for following Standard Precautions in a pulmonary function laboratory?

- A. Eye protection is required when obtaining ABGs from patients with hepatitis.
- B. Reusable mouthpieces should be disposed when a patient has a history of tuberculosis.
- C. Gloves are optional when obtaining arterial blood samples using a kit
- D. Reusable mouthpieces should be disinfected between each patient.

Answer: B

Question No : 9

Pulmonary function tests performed on a patient with tracheal stenosis may demonstrate increased

- A. SVC.
- B. Static compliance.
- C. Raw.
- D. FIF50.

Answer: D

Question No : 10

Which of the following is the most reliable indicator that a patient has achieved his maximum exercise capacity during a progressive exercise (stress) test?

- A. Respiratory exchange ratio greater than 0.8
- B. Heart rate of 210/min
- C. VO₂ remains stable with increasing workload
- D. Minute ventilation greater than 170 L/min

Answer: C

Question No : 11

A pulmonary function technologist is performing quality control on a nebulizer used in the 5-breath dosimeter bronchial challenge. The target output of the device is 0.09 mL, plus or minus 10%. After 10 actuations, the nebulizer output was 75 μ L with a 2.0 mL initial saline dose in the nebulizer. The technologist should

- A. Open the vent before starting the bronchial challenge.
- B. Add an exhalation filter and proceed with testing patients.
- C. Clean and reevaluate this nebulizer.
- D. Accept the results and begin using the device.

Answer: D

Question No : 12

To assure linearity of an oxygen analyzer, calibrate with

- A. Three test gases within the operating range of the instrument
- B. Air
- C. 100% O₂
- D. Two test gases within the operating range of the instrument

Answer: A

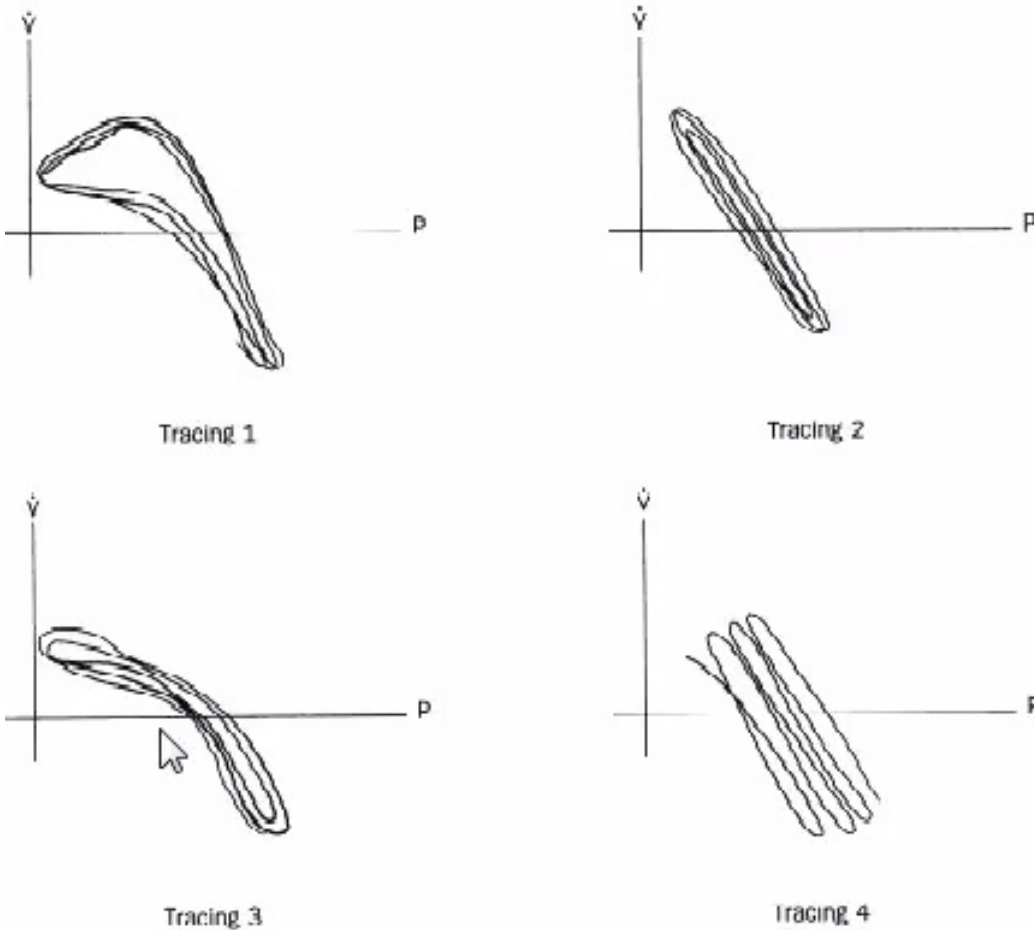
Question No : 13

At the end of a progressive exercise study of a healthy adult male, RER would be approximately what value?

- A. 1.65
- B. 0.83
- C. 1.00
- D. 1.25

Answer: C

Question No : 14



Which of the above patterns illustrates the effect of increasing temperature in the plethysmograph during airways resistance measurement?

- A. 4
- B. 3
- C. 2
- D. 1

Answer: A

Question No : 15

The following test results are available for a 35-year-old subject who is applying for disability:

	<u>% Predicted</u>	<u>Blood Gas Values</u>	
VC	60%	pH	7.42
FRC	65%	PaCO ₂	36 torr
FEV ₁	70%	PaO ₂	65 torr
FVC	60%	HCO ₃ ⁻	23 mEq/L
MVV	88%	BE	-1 mEq/L
		Hb	14 g/dL

These findings are consistent with

- A. A paralyzed hemidiaphragm
- B. Occupational asthma
- C. Pulmonary fibrosis
- D. Poor effort

Answer: A

Question No : 16

When performing quality control in a body plethysmograph using a 5-L isothermal bottle, the VTG at shutter closure are as follows:

<u>Trial</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
<u>VTG (L)</u>	4.91	5.09	5.04	4.86	5.01

A pulmonary function technologist should

- A. Service the mouth pressure transducer.
- B. Recalibrate the box pressure transducer.
- C. Check biological control before beginning testing.
- D. Proceed with patient testing.

Answer: A

Question No : 17

A patient who smokes three packs of cigarettes a day has a DLcoOf 45% of predicted. The patient is referred for exercise (stress) testing. Which of the following should a pulmonary function technologist select to evaluate oxygenation?

- A. Transcutaneous oxygen electrode
- B. Arterial blood gas analysis
- C. Pulse oximetry
- D. End-tidal oxygen tension

Answer: B

Question No : 18

The following blood gas report is questioned by the attending physician:

pH	7.43
PaCO ₂	30 torr
PaO ₂	92 torr
HCO ₃ ⁻	19 mEq/L
BE	+3.5 mEq/L

Which of the following values is INCONSISTENT?

- A. BE
- B. pH
- C. PaCO₂
- D. HCO₃

Answer: A

Question No : 19

While reviewing exercise data, a pulmonary function technologist notes that the patient's anaerobic threshold occurred at 35% of the patient's VO_2MAX . This indicates the patient has

- A. ventilatory limitation
- B. cardiac limitation
- C. a normal response to exercise
- D. given a submaximal effort

Answer: B

Question No : 20

The following arterial blood gas results are obtained during the final workload of a cardiopulmonary exercise test:

pH	7.31
PaCO_2	33 torr
PaO_2	93 torr
HCO_3^-	16.1 mEq/L
SaO_2	97%
Hb	15.6 g/dL

Which of the following best explains these results?

- A. IV solution has contaminated the blood sample.
- B. Blood gas results are normal for someone at end-exercise.
- C. The test indicates a right-to-left shunt.
- D. There is air contamination since the PaCO_2 is so low.

Answer: B

Question No : 21

The following Levy-Jennings charts of control values are obtained: