

Name -

Arshad Ali

ID -

16013

Paper -

Physiology

Department

DPT

Semester -

2nd

Submitted to.

Dr. Sara Naeem

Date - 25/06/2020.

Q: No - 1 What would be the total lung capacity of expiratory reserve volume Continue.

Ans:-

$$TLC = ?$$

$$ERV = 1000 \text{ ml}$$

$$RV = 1200 \text{ ml}$$

$$IC = 3000 \text{ ml}$$

we know that

$$VC = IRV + VI + ERV$$

$$\text{So } VC = IC + ERV \quad \text{--- (1)}$$

Putting the value. --- (1)

$$VC = 3000 + 1000$$

$$VC = 4000$$

So that the total lung capacity as.

$$TLC = VC + RV$$

$$TLC = 4000 + 1200 \text{ ml}$$

$$TLC = 5200 \text{ ml Ans.}$$

Q. No - 2

What is pulmonary edema
Enlist the muscle of
inspiration & muscle of
expiration.

Ans

Pulmonary edema is a condition caused by excess fluid in the lungs. This fluid collects in the numerous air sacs in the lung making it difficult to breathe.

Muscle inspiration

- => Serratus muscle
- pectoralis minor muscle
 - Serratus anterior muscle
 - External intercostal muscle
 - Diaphragm muscle.

Muscle expiration

- Internal intercostal
- External oblique
- Rectus abdominis
- Transversus abdominis
- Internal obliques

Q: No - 3

Compare the properties of different blood group. Also mark universal donor & universal recipient.

Ans: Comparison properties of different blood group

Every a person has a blood type. Blood types are classification of the properties of a person's blood concerning how the blood react to new blood via a blood transfusion and are often organized into a system of ABO blood types.

Blood Types	Antigens on surface	Antibodies made
A	A antigens	Anti B
B	B antigens	Anti - A
AB	A & B antigens	None
O	none	Anti-A & B

The Rh Factor

The four basic blood group further organization is made splitting each type into a positive & negative branch.

This is derived from a third antigen present in red blood cell, called D antigens

• D antigens on red blood cell classifies blood types as Rh positive, such as O or A

• The lack of D antigens of red blood cell classifies blood types as Rh negative such as O or A.

• The Rh factor of an individual can help determine which blood types he/she can receive or donate to in a blood transfusion.

Blood Types Compatibility

Because A & B antigens & antibodies, certain blood

types can interact with each other without either causing a problem in transfusion

Type A_r

A can receive from A types $\{$ O types, but will react to B antigens. It can donate to both A types $\{$ AB types, since AB has A antigens naturally.

Types B_r:-

B can ^{receive} a ~~universal~~ from B O types, but will react to A antigens, it can donate to both B types $\{$ AB types, since AB has B antigen naturally.

Types AB_r

This is due to the presence of both A & B antigens, meaning AB does not producing anti-A or anti-B antibodies. However

because AB has both types of antigens, it can only donate to other AB types.

Types of

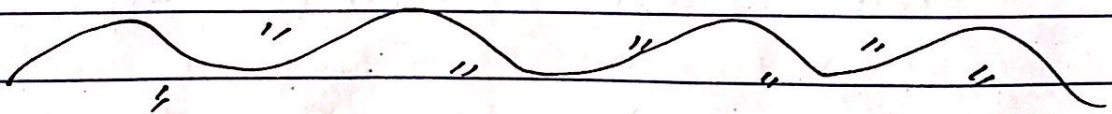
O can only accept blood from other O types since it contains both anti-A & anti-B antibodies that will react to any other blood types.

Mark universal donor &
 ≡ universal recipient ≡

The ABO blood group compatibility between a donor & recipient.

Individual with group O have no A or B antigens and are therefore called universal donors because their blood types will all not react with

the recipients and thus can be given to any other ABO types. Individual who are group AB, with no anti-A or anti-B Antibodies are universal recipients since they have no antibodies to react with any donated antigens. The terms do not apply to any other types of blood grouping & since these other groups are important in blood transfusion the terms are rather misleading.



Q. No - 21

1 Explain respiratory membrane
What are the factors that
affect diffusion of gasses
exchange.

Ans Respiratory Membrane

- The respiratory membrane act as an ~~imp.~~ interface that allow gaseous exchange to take place between the alveolar air and the pulmonary blood. The average thickness of the membrane is about 0.6 micrometers.
- The respiratory membrane is composed of two extremely thin layer of simple squamous epithelium.
- There are six layers.
 - i) alveolar fluid
 - ii) simple squamous epithelium of the alveolus
 - iii) interstitial space

- iv) Basement membrane of the alveolar epithelium
- v) Simple Squamous endothelium of the capillary.
- vi) Basement membrane of the capillary endothelium

• Respiratory membrane is very thin, as it consist of only two cell.

Factor effect diffusion of gasses exchange.

- 1) thickness of the membrane
- 2) The surface area of the membrane
- 3) The diffusion coefficient of the gas in the substance of the membrane -
- 4) The partial pressure difference of the gas between the two side of the membrane.

Q: no - 5

What are the different b/w anatomical dead space & physiological dead space.

What are the clinical manifestation of pulmonary effusion

ANSR Physiological Dead
Space

• Total volume which is not taking part in exchange of gases with pulmonary blood. it includes.

- Volume of gases in non exchange passage
- Non-functional alveoli
- Non-perfusion alveoli

• it increase during respiratory disease, which affect the pulmonary blood flow

Anatomical dead space is

it is the portion of inspired air that does not take part in gaseous

- exchange
it extent more to terminal
bronchiole
- value - 150 ml.

Clinical Manifestation

- 3 - 3 -

Usually the clinical
manifestation are those
caused by the underlying
disease & severity of effusion

- Dyspnea
- pleurisy
- Decreased breath sounds
- Decreased chest wall
movement
- Dull dullness on percussion.

