

ALTERNATIVE TO PRACTICALS REVISION

OS AND DIFFUSION.

- Solutions used in the experiment are _____ (4 solns)
- What volume of solution was used?
- What is the semi-permeable membrane used in the experiment?
- Which of the solutions used has the highest osmotic effect?
- List 4 other transport mechanisms besides osmosis and diffusion.
- List 5 factors that can determine the osmotic pressure of the solutions.
- What determines the process of filtration?
- What instrument was used to determine the conc. of sodium that diffused across the membrane?
- Mention one artificial semi-permeable membrane you know?

INTESTINAL TRANSFER.

- The animal used for this experiment is?
- What part of the animal was used for the experiment?
- The anesthetic agent used is?
- Volume of serosal and mucosal fluids respectively are?
- The solution used as both serosal and mucosal fluid is?
- The incubating temperature and time are?
- 3 reasons why the intestines were everted?
- The principle behind the experiment is?

PHYSIOLOGICAL PROPERTIES OF NERVES.

- The animal used in this experiment is the _____? *Saba*
- Amphibians are preferred to mammals for _____ experiments on physiological properties of _____ tissues because? *Calcium chloride*
- The muscle and nerve used are _____ and _____ respectively? *Saba, nerve*
- The instrument employed in the experiment is _____ the? *Use of wax for*
- The physiologic fluid used is the? *Berges's lactate*
- State All or None law?
- Define Rheobase and Chronaxie?
- Nerve most sensitive to local anesthetics? *C*
- Nerve most sensitive to pressure and hypoxia respectively? *A & B*

10. At what limit was the nerve cut during dissection of the animal? *At a loose part*

MECHANICAL PROPERTIES OF SKELETAL MUSCLES.

- Electrode used here is?
- The physiologic solution used for the experiment is?
- The animal and muscle tissue used are _____ and _____ respectively?
- Differentiate isotonic and isometric recordings?
- Measurement of the kymograph is isotonic. *T/F*
- The pin in the experiment holds _____ part of the toad?
- Differentiate between tetanus and clonus?
- In the simple muscle twitch, stimulator mode is at _____ and _____ respectively for clonus and tetanus.
- The frequencies at which clonus and tetanus occurred respectively were?

LENGTH-TENSION RELATIONSHIP IN SKELETAL MUSCLES.

- The tissue used for the experiment is?
- Give 2 reasons why the answer above is the tissue of choice?
- What type of lever was used, isometric or isotonic?
- What is the theoretical basis for the experiment?
- What does this theory state?
- In the experiment, length of the muscle was kept constant. *T/F*

ESTIMATION OF HEMOGLOBIN AND PCV.

- Methods of Hb estimation are? *Saba, Calcium chloride*
- Another word for PCV is? *Hematocrit*
- List the 4 components of the complete Sahlbi apparatus? *3 test tubes, water bath, centrifuge*
- In the colorimetric method, Hb is estimated in the form of? *Cyanmethemoglobin*
- The diluent in the colorimetric method is? *Drabkin's*
- The solvent of the Drabkin's solution is? *Water*
- The dilution ratio in the colorimetric method is _____ (blood: diluent)? *1:150*
- In the colorimetric method, what was used to zero the colorimeter? *Blank*
- The diluent in the Sahlbi method is? *0.5% NaCl*

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1. About addition of the facility program...
 2. The principle of measurement is...
 3. Let 4 conditions that can lead to...
 4. Let 2 conditions that can lead to...
 5. Method of 2221...
 6. The apparatus work is...
 7. In 2221...
 8. Effect of 2221...
 9. Length and diameter of the...
 10. Normal value of 2221...

PHYSIOLOGICAL PROPERTIES OF CALCIUM
 1. The system work is...
 2. The...
 3. The...
 4. The...
 5. The...
 6. The...
 7. The...
 8. The...
 9. The...
 10. The...

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 8. The...
 9. The...
 10. The...

	A	B	C	D
1				
2				
3				
4				
5				

1. The...
 2. The...
 3. The...
 4. The...
 5. The...
 6. The...
 7. The...
 8. The...
 9. The...
 10. The...

- 11- Right arm and Left leg
- 10- Left arm and Left leg
- 12- True

5. Exploratory electrode, indifferent electrode, aVR(right arm), aVL(left arm), aVF(left leg)
6. Augmented
7. V1, V2, V3, V4, V5, V6, V7
8. 4th intercostal space, right of the sternum.
9. 4th intercostal space, left of the sternum.
10. Midway between V2 and V4.
11. 4th intercostal space, mid-clavicular line.
12. 5th intercostal space, anterior axillary line.
13. 5th intercostal space, mid-axillary line.
14. 5th intercostal space, posterior axillary line.
15. Q-salt enriched jelly.
16. Atrial depolarization.
17. 0.1 seconds.
18. 0.08 seconds.
19. 0.27 seconds.
20. 0.4 seconds.
21. Indifferent electrode connecting the subject to the earth.
22. Ventricular depolarization.
23. Ventricular repolarization.
24. Resting position of the ECG.
25. In unipolar, only one electrode is active while in bipolar, both are active.
26. ECG
27. 1st degree incomplete heart block.
28. 2nd degree incomplete heart block.
29. 1st degree complete heart block.
30. 1st degree incomplete heart block.

* ARTERIAL BLOOD PRESSURE IN MAN

1. Systolic blood pressure
2. Diastolic blood pressure.
3. Pulse pressure.
4. 120/80 mmHg.
5. Manometer.
6. Air-filled (meroid) sphygmomanometer, Mercury-filled sphygmomanometer.
7. Palpation method, Auscultation method.
8. False
9. Korotkoff sounds.
10. False.
11. The effect of gravity decreases the venous return.
12. 40mmHg (120-80).
13. Auscultation (brachial a.), Palpation method (radial a.)

PLETHYSMOGRAPHY

1. To open the pletismograph to the atmosphere, and to disconnect the recorder between determination of blood flow.
2. Occurrence of air leak from the equipment.
3. 5mls
4. 50-70mmHg.

NETROGRAPHY

1. *Flowing of chest with living rat*
2. Above the nipple.
3. It decreased respiration, 250mls of water.
4. Douglas bag.
5. Decreased respiration.
6. Increased respiration.
7. Increased respiration.
8. Increased respiration.
9. Decreased respiration.
10. Increased respiration.
11. Increased respiration.

TESTINAL MOTILITY

1. Small intestine of rabbit.

2. Tyrodes solution.
3. 37.
4. Decreased motility.
5. Increased motility.
6. Decreased motility.
7. Decreased motility.
8. Increased motility.

* LUNG VOLUMES AND CAPACITIES.

1. Spirometer.
2. Wright's Peak flow meter.
3. Vitalograph.
4. Air.
5. Buildup of carbon dioxide in the spirometer in the result.
6. Tidal volume and respiratory rate.
7. Maximum inspirator, volume and the normal inspiration.
8. Maximum expiration and the normal expiration.
9. Tidal volume, inspiratory reserve volume, expiratory reserve volume.

* KIDNEY IN HOMEOSTASIS.

1. Regulation of water content and regulation of acid base balance
2. To measure the specific gravity.
3. 1.020.
4. pH meter, indicator paper.
5. a) lungs b) kidney c) kidney.

* REFLEXES IN MAN.

1. Kneel jerk, ankle jerk, triceps jerk reflex.
2. Achilles tendon reflex.
3. Plantar flexion.
4. S1.
5. Patellar reflex.
6. Quadriceps femoris.
7. L2, L3, L4.
8. Westphal's sign.
9. C7, C8.
10. Genito femoral and ilioinguinal nerve.
11. False.
12. Protection of the eyes from foreign bodies.
13. True.
14. False.
15. Babinski's sign.
16. Genito femoral and ilioinguinal nerve.
17. False.
18. Protection of the eyes from foreign bodies.
19. True.
20. Constant amount of light entering eye.

* SPECIAL SENSES.

1. Ticking watch, tuning fork, audiometer.
2. Drugs (aminoglycosides e.g. gentamycin, streptomycin), vestibulo cochlear nerve tumor.
3. False.
4. Mastoid.
5. Weber's test, Rhine test, Schwabach's test.
6. Conduction deafness
7. False.
8. Snellen's chart.
9. 6/6.
10. 6/6.
11. Poor vision.
12. Red colour blindness.
13. Green colour blindness.
14. Using atropine, staying in a dark room.

contact between the electrodes and the skin is facilitated by?

Wave in an ECG stands for?

P wave lasts for?

QRS complex lasts for?

T wave lasts for?

QRST lasts for?

Attachment of an electrode to the right leg stands for?

QRS complex stands for?

T wave stands for?

Isoelectric line represents?

Differentiate between unipolar and bipolar measurement?

The atrial repolarization can be seen on an ECG. T/F.

Presence of 2 or more P waves before the QRS complex on an ECG indicates?

What condition will result when the PR interval is >0.2 seconds?

*ARTERIAL BLOOD PRESSURE IN MAN

1. Highest blood pressure in man is called? *Systolic*

2. Lowest blood pressure in man is called? *Diastolic*

3. Difference between systolic and diastolic blood pressure is? *Pulse pressure*

4. Average systolic and diastolic blood pressure is?

5. BP is measured using a? *Sphygmomanometer*

6. List 2 types of manometers? *Mercurial and aneroid*

7. List 2 methods of measuring BP? *auscultatory and palpation*

8. Both systolic and diastolic can be estimated from palpation method. T/F.

9. The sound heard with the stethoscope while listening for the BP is called? *Korotkoff*

10. The readings of the manometer is seen by both the performer and subject. T/F.

11. Why is there a decrease in blood pressure on standing erect from a supine position?

12. What is the normal value of pulse pressure?

13. What arteries are involved in the palpation and auscultation methods respectively?

*PHTHYSMOGRAPHY.

1. Define pletysmography?

2. 2 functions of the T-piece in this experiment includes?

3. What is the major pitfall of this experiment?

4. The volume of air used to calibrate the equipment is?

5. Inflating pressure of the cuff is?

*STETHOGRAPHY

Define stethography? *Recording of chest sounds*

At what point in the subject is the stethograph placed?

3. What is the effect of swallowing on respiration, and what was used to demonstrate this?

4. To demonstrate the effect of rebreathing, _____ was used?

What is the effect of the following on breathing?

5. Swallowing.

6. Speech.

7. Sensory stimulation.

8. Breath holding.

9. Voluntary hyperventilation.

10. Exercise.

11. Rebreathing from a Douglas bag.

INTESTINAL MOTILITY.

1. Specimen used is?

2. Solution used is?

3. Temperature at which experiment was performed?

What was the effect of the following on the intestine?

4. 0.01% of Adrenaline.

5. 0.01% of Ach.

6. 0.002% of Atropine Sulphate.

7. Warm temperature.

8. Cold temperature.

LUNG VOLUMES/ CAPACITIES/PULMONARY FUNCTION TEST.

1. Lung volumes are measured using?

2. Peak expiratory flow measured using?

3. Vital capacity, forced vital capacity measured using?

4. Inverted drum in the spirometer is filled with?

5. In the experiment, breathing is done for only short periods because?

6. Minutes ventilatory volume is a product of _____ and _____?

7. Inspiratory reserve volume is the difference between _____?

8. Expiratory reserve volume is the difference between _____?

9. Vital capacity is the sum of?

*KIDNEY IN HOMEOSTASIS.

1. 2 main functions of the kidney tested for in this experiment?

2. What is the urinometer used for in the experiment?

3. During water deprivation in normal health, the kidney is able to produce a concentrated urine with a specific gravity of about?

4. The pH of urine was measured using _____ or _____?

5. How is each of the following waste products of metabolism excreted: a) Carbonic acid. b) Sulphuric acid. c) Phosphoric acid.

MSA 2015/2016 ANSWERS
ANSWER.

FAST DIFFUSION

1. NaCl, Sucrose, MgSO₄.7H₂O

2. Glycerol

3. 0.1% H₂O

4. Limited diffusion, active transport, endocytosis,

exocytosis

5. Molecular weight, ionization, conc. Of substance,

surface area of the permeable membrane, temp, mem.

permeability

6. Any gradient

7. Time study set

8. Phosphate

OSIAL TRANSFER

For

1. Creatine (Sjogren and Heum).

2. Lactate

3. 1 and 1.5mls respectively

4. 10% bicarbonate saline

5. 30 mins

To increase O₂, increase oxygenation and nutrient

supply

6. Cellular active transport (Na-Glu cotransport)

PHYSIOLOGICAL PROPERTIES OF NERVES

Toad

1. Do not require elaborate apparatus to control

2. Can be maintained in the lab supply

3. Gastrocnemius muscle, sciatic nerve of toad.

4. Dual stimulator cathode ray oscilloscope

5. 20-250 mV scale

Toad

a. The fore joint

PHYSICAL PROPERTIES OF SKELETAL MUSCLES

1. Crawfishes

2. Frog's heart

3. Toad & Gastrocnemius

For

1. Fore joint of the toad

2. Single & Repeat mode

3. 50V & 10Hz

RELATIONSHIP BETWEEN SKELETAL MUSCLES AND HEART

1. Tortois muscle of a toad

2. It has parallel fibers (ii) It has less connective tissue

3. Contracting lever

4. Sliding filament theory

Toad

ESTIMATION OF HAEMOGLOBIN AND PCV

1. Salkowski and Sahli's methods

2. Hare method

3. Heptanosed capillary tubes (ii) micro-haematocrit

4. centrifuge (iii) Plasticine (iv) Hawksley's haematocrit

5. colour

6. Cyanomethaemoglobin

7. Methyl's cyanide

Ferrixyanide pH 9.50

1. 250 (0.02ml blood : 5ml diluent)

2. Blank drabkin's solution

3. Freshly prepared 0.1 NHCL

4. Acid hematin

5. 7.5cm & 1mm

6. Heparin

7. 5 minutes

8. Microhaematocrit centrifuge

9. Hawksley's haematocrit reader

10. (Hb x 100)/PCV

11. %

12. MCHC

13. Wrong matching of colours

WHITE BLOOD CELL ESTIMATION

1. Electronic counting & Manual counting

2. 0.5ml & 20 seconds

3. New Improved Neubauer counting chamber

4. 1% glacial acetic acid in distilled water

5. Gensian violet

6. Lyse the red blood cells

7. 100 cells

8. Leishman's stain

9. Eosin in methyl alcohol and Methylene blue.

BLOOD GROUPING

1. Red blood cell, plasma

2. ABO, Rhesus, Lewis, Kell, Kidd, Duffy, Lutheran.

3. 0.9% NaCl

4. Anti A, Anti B, Anti D

5. Blood group O

6. Blood group AB

7. i) A= Blood group A, Rhesus D+

ii) B= Blood group B, Rhesus D+

iii) C= Blood group AB, Rhesus D-

iv) D= Blood group B, Rhesus D-

ESR

1. Rouleaux formation.

2. Inflammation, anaemia, pregnancy, tissue degeneration.

3. Kwaschorkor, malaria.

4. Westergren method.

5. 3.8% sodium citrate.

6. It is an anti-coagulant which acts by chelating calcium

7. 30mm, 2.5mm.

8. 30mm/1 hr, 4-7mm/1st hr.

9. 100, 100

10. 1st hour.

PHYSIOLOGICAL PROPERTIES OF CARDIAC MUSCLES.

1. Toad's heart.

2. 3.

3. 1 ventricle, right and left auricles.

4. Sinus venosus.

5. Sinus venosus beat to auricles beat to ventricle beat to truncus arteriosus.

6. Sino-auricular junction.

7.

8. Auriculo-ventricular groove.

9.

10.

11.

ELECTROCARDIOGRAPHY

1. Electrocardiograph.

2. Bipolar and unipolar.

3. Bipolar lead system.

4. I- Right arm and Left arm.

