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BRAINWARE UNIVERSITY

Term End Examination 2021 - 22
Programme – Bachelor of Science in Physician Assistant
Course Name – Basic Intensive Care
Course Code - BPA507
(Semester V)

Time : 1 Hr.15 Min. **Full Marks : 60**

[The figure in the margin indicates full marks.]

Group-A
(Multiple Choice Type Question) 1 x 60=60

Choose the correct alternative from the following :

(1) The causes for respiratory acidosis are:
a) COPD
b) asthma
c) head injury
d) all

(2) Hyperventilation results into:
a) Respiratory acidosis
b) metabolic acidosis
c) respiratory alkalosis
d) metabolic alkalosis

(3) In hyperventilation there is
a) CO2 accumulation
b) CO2 wash out
c) none
d) both

(4) Causes of increased value of PETCO2:
a) Hyperventilation
b) Hypervolemia
c) Fever
d) Cardiac arrest

(5) Causes of decreased value of PETCO2:
a) Hyperventilation
b) Hypervolemia
c) Cardiac arrest
d) All

(6) Mr. Jackle has a right chest tube inserted for a large pneumothorax. Immediately following insertion, the nurse notes that there is no fluctuation or bubbling in the underwater seal. Which one of the following interventions is the priority?
a) Increase the level of suction
b) Increase the volume in the water seal
c) Strip the chest tube
d) Obtain a STAT chest Xray

(7) Which is incorrect with regards to the fluid and its content?
a) Normal Saline – 150mmol Na+/L
b) Hartmans –131mmolCl-/L
c) D5W- 50gm glucose/L
d) Hartmans – 131mmol Na+/L

(8) Which is not a possibility in the ECG of a pt with hypokalemia?

a) Prolonged QT interval
b) Prominent U waves
c) T wave flattening
d) Prolong PR interval

(9) Which blood type can be given to a patient who is blood group O?

a) A
b) B
c) O
d) AB

(10) Which does not cause a metabolic alkalosis?

a) vomiting
b) diarrohea
c) loop diuretics
d) corticosteroids

(11) Which is NOT a cause of normal anion gap metabolic acidosis?

a) High dose corticosteroids
b) renal tubular acidosis
c) acetzolamide
d) pancreatic fistula

(12) What is not a cause of hypercalcemia?

a) tuberculosis
b) post prandial measurement
c) lung Ca
d) hypomagnasemia

(13) Which is not true of hypomagnasemia?

a) it increases SA node automaticity
b) it causes pre eclampsia
c) It prolongs the QT increasing the risk of Tou rsades
d) it is associated with a 2-3 times increased ris k of AF and SVT post AMI

(14) Which is not true with regards to hypermagnesemia?

a) it causes hypocalcemia
b) it is nearly always seen in renal failure
c) it causes nausea, vomiting, loss of deep tend on reflexes, drowsiness and hypotension
d) it causes widening of the QRS

(15) Which equation is incorrect?

a) anion gap =(Na+ + K+) - (Cl- + HCO3-)
b) calculated serum osmolality = 2(Na + urea + glucose)
c) paO2 = pIO2 – paCO2/0.8
d) the expected CO2 in metabolic acidosis = 1. 5 × HCO3- + 8

(16) A person was admitted in a coma. Analysis of the arterial blood gave the following val ues: PCO2 16 mm Hg, HCO3 - 5 mmol/l and pH 7.1. What is the underlying acid-base disorder

a) Metabolic Acidosis
b) Metabolic Alkalosis
c) Respiratory Acidosis
d) Respiratory Alkalosis

(17) In a man undergoing surgery, it was necessary to aspirate the contents of the upper gast rointestinal tract. After surgery, the following values were obtained from an arterial blo od sample: pH 7.55, PCO2 52 mm Hg and HCO3 - 40 mmol/l. What is the underlying disorder

a) Metabolic Acidosis
b) Metabolic Alkalosis
c) Respiratory Acidosis
d) Respiratory Alkalosis

(18) A young woman is found comatose, having taken an unknown number of sleeping pills an unknown time before. An arterial blood sample yields the following values: pH – 6. 90, HCO3 - 13 meq/liter, PaCO2 68 mmHg. This patient's acid-base status is most acc urately described as

a) Uncompensated metabolic acidosis
b) uncompensated respiratory acidosis
c) simultaneous respiratory and metabolic acid osis
d) respiratory acidosis with partial renal compe nsation

(19) A student is nervous for a big exam and is breathing rapidly, what do you expect out of

the followings

a) Metabolic Acidosis
b) Metabolic Alkalosis
c) Respiratory Acidosis
d) Respiratory Alkalosis

(20) A 45- year-old female with renal failure, missed her dialysis and was feeling sick, what could be the reason

a) Metabolic Acidosis
b) Metabolic Alkalosis
c) Respiratory Acidosis
d) Respiratory Alkalosis

(21) An 80-year-old man had a bad cold. After two weeks he said, "It went in to my chest, I am feeling tightness in my chest, I am coughing, suffocated and unable to breathe!" W hat could be the possible reason

a) Metabolic Acidosis
b) Metabolic Alkalosis
c) Respiratory Acidosis
d) Respiratory Alkalosis

(22) A post operative surgical patient had a naso gastric tube in for three days. The nurse car ing for the patient stated that there was much drainage from the tube that is why she fel t so sick. What could be the reason

a) Metabolic Acidosis
b) Metabolic Alkalosis
c) Respiratory Acidosis
d) Respiratory Alkalosis

(23) The pH of the body fluids is stabilized by buffer systems. Which of the following comp ounds is the most effective buffer system at physiological pH

a) Bicarbonate buffer
b) Phosphate buffer
c) Protein buffer
d) All of these

(24) Which of the following laboratory results below indicates compensated metabolic alkal osis

a) Low p CO2, normal bicarbonate and, high p H
b) Low p CO2, low bicarbonate, low pH
c) High p CO2, normal bicarbonate and, low p H
d) High pCO2, high bicarbonate and High pH

(25) The greatest buffering capacity at physiological p H would be provided by a protein ric h in which of the following amino acids

a) Lysine
b) Histidine
c) Aspartic acid
d) Leucine

(26) Which of the following is most appropriate for a female suffering from Insulin depende nt diabetes mellitus with a pH of 7.2, HCO3-17 mmol/L and pCO2-20 mm HG

a) Metabolic Acidosis
b) Metabolic Alkalosis
c) Respiratory Acidosis
d) Respiratory Alkalosis

(27) Causes of metabolic alkalosis include all the following except

a) Mineralocorticoid deficiency
b) Hypokalemia
c) Thiazide diuretic therapy
d) Recurrent vomiting

(28) Renal Glutaminase activity is increased in

a) Metabolic acidosis
b) Respiratory Acidosis
c) All of these
d) None of these

(29) Causes of lactic acidosis include all except

a) Acute Myocardial infarction
b) Hypoxia
c) Circulatory failure
d) Infections

(30) Which out of the following conditions will not cause respiratory alkalosis

a) Fever
b) Anxiety

c) Laryngeal obstruction
d) Salicylate toxicity

(31) All are true about metabolic alkalosis except one

a) Associated with hyperkalemia
b) Associated with decreased ionic calcium con centration
c) Can be caused due to Primary hyperaldoster onism
d) Can be caused due to Renin secreting tumor

(32) Choose the incorrect statement out of the followings

a) Deoxy hemoglobin is a weak base
b) Oxyhemoglobin is a relatively strong acid
c) The buffering capacity of hemoglobin is less er than plasma protein
d) The buffering capacity of Hemoglobin is due to histidine residues

(33) Carbonic anhydrase is present at all places except

a) Gastric parietal cells
b) Red blood cells
c) Renal tubular cells
d) Plasma

(34) All are true for renal handling of acids in metabolic acidosis except

a) Hydrogen ion secretion is increased
b) Bicarbonate reabsorption is decreased
c) Urinary acidity is increased
d) Urinary ammonia is increased

(35) Choose the incorrect statement about anion gap out of the followings

a) In lactic acidosis anion gap is increased
b) Anion gap is decreased in Hypercalcemia
c) Anion gap is decreased in Lithium toxicity
d) Anion gap is decreased in ketoacidosis

(36) Excessive citrate in transfused blood can cause which of the following abnormalities

a) Metabolic alkalosis
b) Metabolic acidosis
c) Respiratory alkalosis
d) Respiratory acidosis

(37) Normal ABG includes:

a) PO2
b) Pco2
c) pH
d) All of these

(38) Which of the assumption is/are correct

a) Respiratory problem → the kidneys compen sate by conserving or excreting HCO3 is TR UE
b) Metabolic problem → the lungs compensate by retaining or blowing off CO2 is TRUE
c) PaCO2 or HCO3 in a direction opposite its p redicted direction or not close to predictive v alue is FALSE
d) All of these

(39) The causes for respiratory acidosis are

a) COPD
b) Asthma
c) head injury
d) All of these

(40) Hyperventilation results into

a) Respiratory acidosis
b) metabolic acidosis
c) respiratory alkalosis
d) metabolic alkalosis

(41) Causes of increased value of PETCO2

a) Hyperventilation
b) Hypervolemia
c) Fever
d) Cardiac arrest

(42) Causes of decreased value of PETCO2

a) Hyperventilation
b) Hypervolemia
c) Cardiac arrest
d) All of these

(43) Mr. Jackle develops the following rhythm. Interpret this rhythm strip

a) First degree block
b) Junctional rhythm
c) Second degree block
d) Complete heart block

(44) Mr. Jackle has a right chest tube inserted for a large pneumothorax. Immediately following insertion, the nurse notes that there is no fluctuation or bubbling in the underwater seal. Which one of the following interventions is the priority

a) Increase the level of suction
b) Increase the volume in the water seal
c) Strip the chest tube
d) Obtain a STAT chest xray

(45) Which is incorrect with regards to the fluid and its content

a) Normal Saline – 150mmol Na+/L
b) Hartmans – 131mmol Na+/L
c) Hartmans –131mmolCl-/L
d) D5W- 50gm glucose/L

(46) Which is not a possibility in the ECG of a pt with hypokalemia

a) prolong PR interval
b) prominent U waves
c) T wave flattening
d) Prolonged QT interval

(47) What does not cause impaired accuracy of the pulse oximiter

a) ambient light
b) carboxyhaemoglobin
c) methaemoglobin
d) hypothermia

(48) Which blood type can be given to a patient who is blood group O

a) A
b) B
c) AB
d) O

(49) Which does not cause a metabolic alkalosis

a) vomiting
b) diarrohea
c) loop diuretics
d) thiazide diuretics

(50) Which is NOT a cause of normal anion gap metabolic acidosis

a) acetzolamide
b) pancreatic fistula
c) diarrohea
d) high dose corticosteroids

(51) What is not a cause of hypercalcemia

a) post prandial measurement
b) tuberculosis
c) lung Ca
d) hypomagnasemia

(52) Which is incorrect with regards to hypocalcemia

a) it causes QT prolongation
b) treatment with calcium may not work if magnesium is not given as well
c) i.v administation of calcium requires cardiac monitoring
d) hyperventilation produces tetany by causes a fall in the total body calcium

(53) Which is not true of hypomagnasemia

a) it increases SA node automaticity
b) it causes pre eclampsia
c) it prolongs the QT increasing the risk of Torsades
d) it is associated with a 2-3 times increased risk of AF and SVT post AMI

(54) Which is not true with regards to hypermagnesemia

a) it is nearly always seen in renal failure
b) it causes nausea, vomiting, loss of deep tendon reflexes, drowsiness and hypotension
c) it causes hypocalcemia
d) if an overdose is taken, Calcium should be given as it is direct antagonist of magnesium

(55) Which equation is incorrect

a) anion gap =(Na+ + K+) - (Cl- + HCO3-)
b) calculated serum osmolality = 2(Na + urea + glucose)
c) paO2 = pIO2 – paCO2/0.8
d) the expected CO2 in metabolic acidosis = 1.

$5 \times HCO3- + 8$

(56) The first priority in managing a witnessed ventricular fibrillation cardiac arrest is

a) defibrillation times 3
b) endotracheal intubation
c) establishment of intravenous access
d) external cardiac massage

(57) In a haemodynamically stable 20-year-old male presenting with blunt chest trauma, the best screening test for diagnosis of cardiac injury requiring treatment is

a) chest X-Ray
b) serum CK-MB levels
c) serum Troponin levels
d) standard 12 lead ECG

(58) A patient with a central dislocation of the hip following a motor car accident is noted to be shocked on admission, one hour after the accident. The most likely cause is

a) Fat embolism
b) Ruptured urethra
c) Neurogenic shock
d) None of these

(59) A 30-year-old man presents to the Emergency Department following a high speed moto r vehicle accident. He has marked abdominal distenson, a pulse rate of 130 and a blood pressure of 80/50 mmHg. The most appropriate initial investigation would be

a) abdominal angiogram
b) abdominal paracentesis
c) CAT scan of the abdomen
d) FAST (focussed abdominal sonography for t rauma) scan

(60) A 30-year-old man presents to the Emergency Department following a high speed moto r vehicle accident. He has a Glasgow Coma Score of 7 and arrives with a cervical colla r in situ and an 18 gauge intravenous cannula in his right hand. You first priority in ma naging this patient would be to

a) insert a large bore intravenous cannula
b) perform a CAT scan of the brain
c) perform a cervical spine X-ray
d) secure the airway with an endotracheal tube