



SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES & TECHNOLOGY
THIRUVANANTHAPURAM—695 011, INDIA.

(An Institute of National Importance under Govt. of India)

Phone—(91)0471—2443152 Fax—(91)0471—2446433, 2550728

Email-sct@sctimst.ac.in Web site—www.sctimst.ac.in

ROLL NUMBER:

WRITTEN TEST FOR MFCP OF PERFUSIONIST – A TO B

DATE : 26/11/2019

TIME : 9.30 AM

DURATION : 60 MINUTES

TOTAL MARKS : 50

INSTRUCTIONS TO THE CANDIDATE

1. Write your Roll Number on the top of the Question Booklet and in the Answer Sheet.
2. Each question carries 1 mark.
3. There will not be any Negative Marking.
4. Write legibly the alphabet of the most appropriate answer in the separate answer sheet provided.
5. Over-writing is not permitted.
6. Marking more than one answer will invalidate the answer.
7. Candidate should sign on the Answer Sheet.
8. Candidate should hand over Answer Sheet to the invigilator before leaving the examination hall.

Kanj

WRITTEN TEST FOR I MFCP –PERFUSIONIST A TO B

1.A bubble oxygenator does not have

- a) Defoamer
- b) Venous reservoir
- c) Arterial reservoir
- d) Heat exchanger

2.The first arterial switch operation was performed by

- a) Schwann
- b) Jatene
- c) Lillehie
- d) none of the above

3.The first centrifugal pump was developed by

- a) John Gibbon
- b) DennisPapin
- c) Forest Dodrill
- d) Walton Lillehie

4.Who isolated heparin first?

- a) Wilfred Bigelow
- b) Jay McLean
- c) Donald Hill
- d) Clarence Crafoord

5.Incommercially available centrifugal pumps which one have maximum speed (RPM) and rated flow(L/Min)?

- a) Life stream isoflow
- b) Maquetrotaflow
- c) Sorin revolution
- d) Medtronic biomedicus

6.An example for CPBsimulation for training and competency testing is

- a) Hamilton simulation system
- b) Manbit hi-fidelity simulation system
- c) Fouilloux simulator
- d) Orpheus simulation system

7. Recommendation from society of Thoracic surgeons (STS) regarding intra-operative glucose management in Diabetic and non-diabetic patients is

- a) Glucose level < 150 mg/dl
- b) Glucose level < 180 mg/dl
- c) Glucose level <200 mg/dl
- d) none of the above

8.Clinical condition that decrease ACT is

- a) Thrombocytopenia
- b) Inhibition of platelet function
- c) Surgical incision
- d) Protamine

9.300 ml of FFP contains approximatelyiu of AT III

- a) 30,000 IU
- b) 3000 IU
- c) 300 IU
- d) None of the above

10.Safest Bivalirudine infusion dose for maintaining anticoagulation in CPBis

- a) 1.0 mg/Kg/hr
- b) 1.5 mg/Kg/hr
- c) 2.0 mg/Kg/hr
- d) 2.5 mg/Kg/hr or higher

WRITTEN TEST FOR I MFCP –PERFUSIONIST A TO B

11. Most common accidents reported in Kurusz et al (1982 -85) survey published about perfusion safety are

- a) Protamine reaction, hypo perfusion & gas embolism
- b) Arterial line embolism, DIC, electrical failure & oxygen failure
- c) Protamine reactions, coagulopathy & heater cooler failure
- d) Air embolism, DIC, inadequate perfusion

12. Clinically significant cold agglutinin involves

- a) Ig A
- b) Ig E
- c) Ig G
- d) Ig M

13. Low risk timing of a schedulable cardiac surgery that requires CPB in pregnant patient is

- a) first Trimester
- b) second Trimester
- c) third trimester
- d) before 10 weeks

14. In normothermic CPB foetal bradycardia is defined as

- a) FHR less than 180 beats per minute
- b) FHR less than 150 beats per minute
- c) FHR less than 120 beats per minute
- d) FHR less than 80 beats per minute

15. All are true in considering immature myocardium except

- a) Preferred substrate for ATP production is fatty acid
- b) Insulin sensitivity is impaired
- c) 5' nucleotidase level is low
- d) Catecholamine sensitivity is low

16. pH of plasmalyte A solution is

- a) 7.5
- b) 7.4
- c) 7.6
- d) 7.45

17. Three main homeostatic systems which maintain the pH except

- a) Buffer solution
- b) Liver
- c) Lungs
- d) Kidneys

18. Appropriate blood flow rate should be determined by the evaluation of a combination except

- a) Venous saturation
- b) Body surface area
- c) Arterial blood pressure
- d) Arterial PO₂

19. The major source of haemolysis during CPB is

- a) Bank blood
- b) Cardiectomy suction
- c) Arterial cannula
- d) Membrane fibres

20. The degree of haemolysis reflected by the following except

- a) Increased plasma levels of free hemoglobin
- b) Increased lactate dehydrogenase
- c) Increased levels of haptoglobin
- d) Decreased levels of haptoglobin

WRITTEN TEST FOR I MFCP –PERFUSIONIST A TO B

21. Drugs used to neutralize heparin are the following except

- a) Platelet factor 4
- b) Protamine
- c) Heparinase
- d) Danaparoid sodium

22. The rate of heat exchanger through a particular material is proportional to the temperature gradient and the area of transfer is known as

- a) Fick Ist law
- b) Fourier's law
- c) Equilibrium law
- d) Laplace theory

23. Identify the negative effect of hypothermia from the following.

- a) Decreases metabolic rates
- b) Decreases rates of degradative reactions
- c) Inhibits intra cellular calcium accumulation
- d) Impairs oxygen delivery, dissociation

24. Tranexamic acid is an isomer of

- a) Aminocaproic acid
- b) 4-aminomethylcyclohexane carboxylic acid
- c) Plasminogen
- d) None of the above

25. Which of the following is true about pulmonary circulation?

- a) Blood oxygen content is higher in the pulmonary vein than in the pulmonary artery
- b) Blood is pumped by left ventricle
- c) Resting blood pressure in the pulmonary artery is equal to that in the aorta
- d) The cardiac output to the pulmonary artery is approximately 1/6 of that into the systemic circuit

26. The first successful open-heart surgery was performed using heart lung machine in

- a) 1952
- b) 1953
- c) 1962
- d) 1965

27. Which is the most used ventricular assist device in children

- a) Heart mate
- b) Abiomed
- c) Thoratec
- d) Berlin Heart

28. The first successful closure of atrial septal defect using cardiopulmonary bypass was done by

- a) John Gibbon
- b) Rastelli
- c) Christian Barnard
- d) Buckberg

29. Who among the following introduced potassium citrate for cardioplegic arrest?

- a) Bertschneider
- b) Melrose
- c) Bigelow
- d) Buckberg

30. Who is credited with promoting deep hypothermic circulatory arrest?

- a) Schummway and Barratt boyes
- b) Lillehei and Kirklin
- c) Yacoub and Bertschnieder
- d) Ross and Buckberg

31. The following are components of Delnido cardioplegia except?

- a) Mannitol
- b) Lignocaine
- c) Calcium
- d) Sodium bicarbonate

WRITTEN TEST FOR I MFCP –PERFUSIONIST A TO B

32. Which of the following Gas is used in IABP?
- a) Argon
 - b) Helium
 - c) Carbon dioxide
 - d) Hydrogen
33. The following are membrane oxygenators except?
- a) Spiral oxygenators
 - b) Bubble oxygenators
 - c) Hollow fibre oxygenator
 - d) Disc oxygenators
34. Selective antegrade cerebral perfusion flow rates should be?
- a) 15ml/kg/min
 - b) 50ml/kg/min
 - c) 150 ml/kg/min
 - d) Flow according to expected duration of the procedure
35. The following monitoring is done during selective antegrade cerebral perfusion except?
- a) Trans cranial doppler
 - b) Bi-lobar NIRS
 - c) Mvo2
 - d) Blood lactate levels
36. Usual causes of increased post membrane pressures on ECMO are, EXCEPT?
- a) arterial cannula obstruction
 - b) thrombus formation
 - c) increased SVR
 - d) Increased preload
37. Following should not be done when initiating CPB in deeply cyanotic children
- a) Drain the heart completely
 - b) Maintain perfusate temperature
 - c) Maintain ionic calcium concentration
 - d) Maintain adequate perfusion pressures
38. Heparin resistance is managed by the following except.
- a) Start heparin infusion
 - b) Fresh frozen plasma Infusion
 - c) Use AT3 concentrate
 - d) Heparin analogues
39. What should be the dose of heparin for ECMO initiation?
- a) 100 units/kg
 - b) 200 units/ kg
 - c) 300 units/kg
 - d) 400 units/kg
40. The maximum amplitude in TEG is an indicator of
- a) Clot strength
 - b) Fibrinolysis
 - c) Hypercoagulability
 - d) Platelet dysfunction
41. All of the following can be done in a regressed LV situation except?
- a) MUF
 - b) Maintain LA pressures less than 10
 - c) Give bolus volume
 - d) Avoid hypothermia
42. The maximum allowable MUF rate in children is
- a) 5 ml/kg
 - b) 10 ml/kg
 - c) 20 ml /kg
 - d) 30 ml/kg

WRITTEN TEST FOR I MFCP –PERFUSIONIST A TO B

43. The main aim of Zero balance ultrafiltration is
- a) To reduce fluid overload
 - b) To remove inflammatory mediators
 - c) To remove heparin
 - d) To reduce lactate level
44. The priming volume of 3/16 tubing in ml/M is
- a) 15
 - b) 30
 - c) 60
 - d) 100
45. Which surgeon is credited with the first clinical use of modified ultrafiltration in pediatric cardiac surgery.
- a) Ross Ungerleider
 - b) Mark deLeval
 - c) Martin Elliot
 - d) Pedro delNido
46. "Stealth" perfusion means
- a) low heparin
 - b) normothermic perfusion
 - c) mini bypass
 - d) left heart bypass
47. What is the negative suction most commonly used in a vacuum assisted venous drainage
- a) 10mm Hg
 - b) 20- 40mm Hg
 - c) 60 mm Hg
 - d) 100 mm Hg
48. The most effective treatment of gross air embolism is
- a) Pharmacologic
 - b) Hypothermia
 - c) Retrograde cerebral perfusion
 - d) Hyperbaric oxygenation
49. What is the normal oxygen carrying capacity of 1 g of haemoglobin
- a) 1.34 ml
 - b) 2.68 ml
 - c) 3.40 ml
 - d) 6.80 ml
50. What does Near InfraRed Spectroscopy (NIRS), when applied to forehead, measure
- a) Electrical activity of brain
 - b) arterial oxygen saturation
 - c) tissue oxygenation
 - d) venous saturation

MFCP -Perfusionist -A to B

Answer Key

1	B	20	C	39	B
2	B	21	D	40	A
3	B	22	B	41	C
4	B	23	D	42	C
5	B	24	B	43	B
6	D	25	A	44	A
7	B	26	B	45	C
8	C	27	D	46	C
9	C	28	A	47	B
10	D	29	B	48	D
11	A	30	A	49	A
12	D	31	C	50	C
13	B	32	B		
14	C	33	B		
15	A	34	B		
16	B	35	D		
17	B	36	D		
18	D	37	A		
19	B	38	A		

Kay