श्री चित्रा तिरुनाल आयुर्विज्ञान और प्रौघोगिकी संस्थान,तिरुवनन्दपुरम् - ६९५ ०११,केरल, भारत
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WRITTEN TEST FOR MFCP TECHNICAL ASSISTANT (LAB) A TO B –DIVISION OF THROMBOSIS RESEARCH

Roll No. [ ]

Date: 26.11.2019

Time: 9.30 A.M

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. Write legibly the alphabet of the most appropriate answer in the separate answer sheet provided.
3. There will not be any Negative marking.
4. Over-writing is not permitted.
5. Candidate should sign in the question paper and answer sheet.
6. No clarifications will be given.
7. Candidate should hand over the answer sheet and question paper to the invigilator before leaving the examination hall.

Signature of the Candidate

Office Copy

Sree Chitra Tirunal Institute for Medical Sciences & Technology
Technical Assistant (Lab) A to B
Division of Thrombosis Research (MFCP)

1.	Quality System implemented in testing laboratories are based on A. ISO 10993 B. ISO 17025 C. ISO 9001 D. All the above
2.	The latest ISO 17025 was released in A. 2017 B. 2018 C. 2016 D. 2019
3	In ISO 17025 The parameters on which risk and opportunity is not based A. Give assurance that the management system achieves its intended results. B. Achieves improvement C. Prevent or reduce undesired impacts and potential failures in lab activities. D. Specific requirements for test reports.
4.	The parameters of sterilization by autoclaving are: A. 112 ^{0}C 12 psi. pressure and 15 min B. 115 ^{0}C 12 psi. pressure and 15 min C. 121^{0}C 12 psi. pressure and 15 min D. All of the above
5.	In water quality checking the points of evaluation are A. Turbidity B. pH C. metal ion concentration D. all of the above
6.	For quality assurance in autoclaving biological indicator used A. Spores of *Bacillus subtilis* B. Spores of Geo*bacillus sterothermophilus* C. Spores of *Bacillus pumilis*

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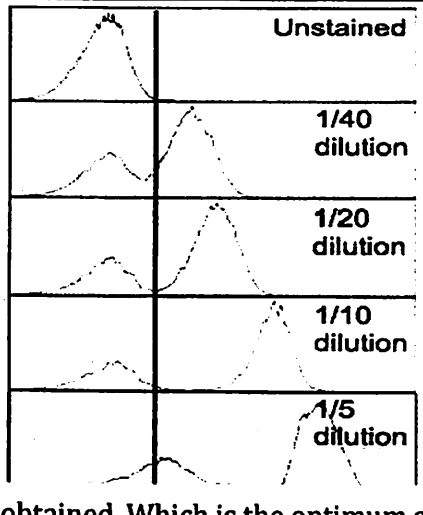
	D. Spores of *Clostridium tetani*
7.	In NAT test for plasma products A. Genetic material (DNA/RNA) of HIV, HCV detected B. Protein material of HIV/HCV detected C. Antibodies to HCV/ HIV detected D. All of the above
8.	A pH of 2 is _____ than a pH of 5 A. 1000 times more acidic B. 100 times more acidic C. 2 times less acidic D. 20 times less acidic
9.	Blood for an RBC count must be prepared from: A. citrated blood B. heparinized blood C. EDTA blood D. oxalated blood
10	A biohazardous container is used to discard A. lancets B. syringe with out needle C. band-aid wrappers D. A & B
11	An automated hematology cell count uses the principle of A. diffusion B. changes in cell electrical currents C. light wave scattering D. color absorption changes
12	Following factors are Vitamin K dependant except A. Factor VIII B. Factor IX C. Factor X D. Factor II
13	In blood clotting the sequence of events are A. Platelets aggregation and fibrin clot formation are parallel and mutually dependent processes B. Fibrin clot forms first on which platelets aggregate C. Platelets aggregate before fibrin clot forms D. Platelets aggregation and fibrin clot formation are independent and have separate function in haemostasis
14	The largest energy reserve in humans is A. Blood glucose

	B. Adipose tissue triacylglycerol C. Liver glycogen D. Muscle glycogen
15	Which of the following may be used to control quality of analytical data in lab A. Levy Jennings plot B. Schewhart plot C. Westgard rules D. Both A &C
16	During long storage in cold, concentrated formalin becomes turbid due to the formation of A. Formic acid B. Paraformaldehyde C. Formaldehyde D. All the above
17	The phase of coagulation that begins with exposed endothelial collagen is: A. Extrinsic pathway B. Intrinsic pathway C. Common pathway D. Fibrin stabilization
18.	The following is not true about platelets: A. They are formed in the bone marrow from megakaryocytes B. Their life span in circulation is about 30 days C. In a normal person, 20% of the platelets are found in the spleen. D. Their granules store contain ADP and serotonin.
19	Method for preparative scale purification of antibodies A. Preparatory gel electrophoresis B. Immunoprecipitation C. Affinity Chromatography D. Reverse phase chromatography
20	In an ELISA, HRP is the enzyme, TMB is the substrate and reaction is stopped with acid. Which is the best filter to read the absorbance? A. 350 nm B. 450 nm C. 650 nm D. 550 nm
21	The most suitable marker common for hematopoeitic stem cell and endothelial progenitor cell in peripheral blood is: A. CD14 B. CD45 C. CD34 D. CD61
22	A child stung by a bee experiences respiratory distress within minutes and lapses into unconsciousness. This reaction is probably mediated by

	A. IgG antibody B. IgE antibody C. Sensitized T cells D. IgM antibody
23	Flow cytometer is a device used for analysis of parameters on a flowing cell such as : A. Cell size Granularity of Cells B. Fluorochrome C. labeled surface antigen D. All the above
24	How does a natural killer cell recognize cancer cells? A. By their location B. By their accelerated growth rate C. By their altered cell surface proteins D. By their mutated DNA
25	Mesenchymal stem cells are most abundant in A. Blood B. Bone Marrow C. Cardiac tissue D. Liver tissue
26	The process used to remove electrolytes from a solution of protein: A. Electrolysis B. Dialysis C. Proteolysis D. Electrophoresis
27	Work procedure revision/correction can be initiated by A. Scientist In Charge B. QM C. TM D. Any authorized laboratory staff
28	Glutaraldehyde is used as a fixative for tissues in A. Transmission and scanning electron microscopy B. Transmitted light microscopy C. Fluoroscence microscopy D. Inverted light microscopy
29	Beer - Lambert Law states that A. Absorbance of incident light is proportional to concentration of the molecule in solution B. Absorbance of incident light is proportional to path length C. Absorbance of incident light is inversely proportional to path length D. Both A & B
30	The repeatability of test measurements is referred to as A. Accuracy B. Precision

	C. Quality Control D. Reliability
31	A blood sample is left on a phlebotomy tray for four hours before it is delivered to the laboratory. Which group of tests could be performed with the **LEAST** affected results? A. Glucose, Na, K, CO_2 content B. Uric Acid, BUN, creatinine C. CK, ALT, ALP, ACP D. Lactate and ammonia
32	A protein is precipitated with ammonium sulfate, and is dissolved in buffer, pH=7.0. The solution is passed through a gel filtration column. The protein is expected to: A. Elute from the column after the residual salt. B. Elute before the residual salt. C. Stick to the column. D. Remain at the top of the column.
33	What information do you need to know when choosing which fluorophores to use in your flow cytometry experiments? Select all that apply A. The lasers and filters available on your flow cytometer B. Which sheath fluid you will be using C. The granularity of your target cell type D. The excitation and emission spectra of the fluorophores
34	 While titrating an antibody this graph is obtained. Which is the optimum antibody dilution you will use for the future experiment A. 1/40, B. 1/20, C. 1/10, D. 1/5
35	Which of the following coenzymes has maximum absorption at 340 nm A. NAD+ B. NADP+

	C. Both NAD+ and NADP+ D. Both NADH+ and NADPH+
36	Which of the following not comes in the Scope of latest version of 10993-4 A. a classification of medical devices that are intended for use in contact with blood, based on the intended use and duration of contact as defined in ISO 10993-1 B. the fundamental principles governing the evaluation of the interaction of devices with blood C. the rationale for structured selection of tests according to specific categories, together with the principles and scientific basis of these tests. D. All the above
37	46. In a UV-Vis spectrum of hemoglobin, the highest absorption is at A. 280 nm B. 350 nm C. 405 nm D. 650 nm
38	Which of the following is not a considered as a viral inactivation step for the plasma products A. Chromatography B. Centrifugation C. Solvent/detergent treatment D. Low P H
39	Stored platelets rich plasma may show acidic pH because of: A. Lactate production B. Accumulation of CO2 in the bag C. Lower pH of the anticoagulant - citrate D. Both A& B
40	Most reliable surface marker for detection of platelet activation; A. CD41 B. CD42 C. CD61 D. CD62
41	One of the following molecules is not a suitable agonist for measurement of platelet function test in PRP using aggregometer A. Thrombin B. Arachidonic Acid C. ADP D. Collagen
42	What would be the best way to determine the eluted protein in the chromatography column fractions? A. UV absorbance B. Refractive Index C. SDS-PAGE D. Lowry's protein assay

43	Which of the following is a DNA virus A. Human immunodeficiency virus B. Hepatitis B virus C. Parvovirus B19 D. Hepatitis C virus
44	Which of the following is a functional test for von Willebrand factor? A. Factor VIII assay B. Ristocetin cofactor assay C. DNA analysis to identify the site of the genetic mutation D. Clotting time
45	Affinity of red cells for oxygen decreases when levels of 2,3 DPG A. Decreases B. Increases C. No effect D. Both A & B
46	The biological agent for validation of blood product sterilization by filteration is *A. Bacillus dimunita* *B. Bacillus pumilis* *C. Bacillus subtilis* *D. Bacillus stearothermophilus*
47	Life span of red blood cells after storage in PVC bags may be detected by A. Iodine 125 labeling B. Chromium 51 labeling C. Thymidine labeling D. Cobalt 60 labeling
48	When cells die by apoptosis, as compared to by necrosis, they are much less likely to produce inflammation and damage to the surrounding tissue because they -------- A. Are not subsequently phagocytized by macrophages and neutrophils B. Do not break open and release the cytoplasmic contents C. Are rarely malignant, infected with virus or otherwise unhealthy D. Recycle their membrane components to prevent display of antigen
49	As Per Indian Pharmacopoeia, when should the assay of coagulation factor XIII is carried out for evaluation of Fibrin Sealant Kit. A. If the human coagulation factor XIII content in component1 is greater than 10 units/ ml B. If the human coagulation factor XIII content in component1 is less than 10 units/ ml C. If the human coagulation factor XIII content in component1 is greater than 5 units/ ml D. If the human coagulation factor XIII content in component1 is less than 5 units/ ml

50	Routinely issued tissue culture dishes are A. PTFE B. Polystyrene C. Thermanox D. Nylon
	END

ANSWER KEY TECHNICAL ASSISTANT (LAB) A TO B
DIVISION OF THROMBOSIS RESEARCH (MFCP)

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