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2020

**TEST BOOKLET**

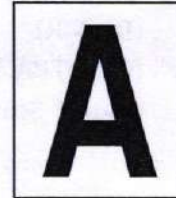
TEST BOOKLET SERIES

Time allowed :  $1\frac{1}{2}$  hours

Full marks : 100

Answer *all* the questions.

Questions are of equal value.



Serial No. **001** .....

Roll No.:

Signature of the Candidate:

**INSTRUCTIONS**

Candidates should read the following instructions carefully before answering the questions:

1. This booklet consists of 12 pages including this front page, Verify the Page Nos. and Test Booklet series on each page and bring at once to the Invigilator's notice any discrepancy.
2. Answers will have to be given in the Special Answer-Sheet supplied for the purpose.
3. Before you proceed to mark in the Answer-Sheet in response to various items in the Test Booklet, you have to fill in some particulars in the Answer-Sheet as per instructions sent to you in the Admit Card. ***Do not fold the Answer-Sheet as this will result in error in your marks.***
4. All questions are of multiple-choice answer-type. You will find ***four*** probable answers (A), (B), (C) and (D) against each question. Find out which of the four answers appears to be correct or the best. Now darken the circle corresponding to the letter of the selected answer in the Answer-Sheet with **Black Ball Point Pen** as per instructions printed on the reverse of the Admit Card and in the Answer-Sheet.
5. One and only one circle is to be fully blackened for answer. Any spot in any other circle (multiple circle) or in wrong circle will be considered as wrong answer.
6. ***There will be negative marking of  $\frac{1}{3}$  mark for each wrong answer.***
7. There is a blank page at the end of this Booklet for Rough Work.
8. ***The Special Answer-Sheet should be handed over to the Invigilator before leaving the Examination Hall. You are permitted to take away the used Test Booklet after completion of the examination.***



1. The investigation commonly used to measure donor GFR before renal transplant is

- (A) DMSA Scan
- (B) MRI
- (C) DTPA Scan
- (D) CT Scan

2. False negative urine dipstick for protein occurs in

- (A) presence of blood
- (B) alkaline urine
- (C) high urine specific gravity
- (D) non albumin proteinuria

3. Thrombocytopenia with paradoxical arterial and / or venous thrombosis occurs in

- (A) Type 1 HIT
- (B) Fondaparinux use
- (C) Regional citrate anticoagulation
- (D) Type 2 HIT

4. Vaccine is available for all except

- (A) Pneumococcus
- (B) Hepatitis C
- (C) Varicella
- (D) Hepatitis B

5. Which of the following is not used in clinical practice?

- (A) Iron-dextran
- (B) Iron Sucrose
- (C) Ferric carboxymaltose
- (D) None of the above

6. The 2011 AAMI Standard for the maximum allowable bacteria count in water is Less than (cfu/ml)

- (A) 200
- (B) 100
- (C) 0.25
- (D) 2

7. If a dialyzer turns yellow, the first blood test advised is

- (A) Sodium
- (B) Creatinine
- (C) Potassium
- (D) LFT and Viral Serology

8. Anti N antibodies are associated with use of

- (A) Formaldehyde
- (B) Bleach
- (C) Heparin
- (D) Peracetic acid

9. In human, the Kidneys together receive

- (A) 50% of cardiac output
- (B) 5% of cardiac output
- (C) 10% of cardiac output
- (D) 25% of cardiac output

10. Plasmapheresis is given in all the following diseases except

- (A) G. B. Syndrome
- (B) Anti GBM disease
- (C) TTP
- (D) Obstructive Uropathy



11. Which of the following may cause a slow heart rate?

- (A) Hypernatremia
- (B) Hypercalcemia
- (C) Hyperkalemia
- (D) Hypokalemia

12. The most likely cause of post-renal failure is

- (A) Severe dehydration
- (B) Nephrotoxic drug
- (C) Glomerulonephritis
- (D) Benign prostatic hypertrophy

13. The following may be the symptoms of dialysis disequilibrium syndrome except

- (A) Skin rash
- (B) Coma
- (C) Seizures
- (D) Nausea, Vomiting

14. Which of the following has got the longest half life?

- (A) Darbopoietin
- (B) CERA
- (C) Erythropoietin alpha
- (D) Erythropoietin beta

15. Usual number of cuffs in Perm Cath is

- (A) 2
- (B) 1
- (C) 3
- (D) 0

16. The recommended single pool Kt/v for a dialysis session in a CKD 5 patient is at least

- (A) 1.5
- (B) 1.6
- (C) 1.2
- (D) 0.8

17. The maximum decrease of TCV acceptable for continued use of a dialyzer is

- (A) 10%
- (B) 20%
- (C) 30%
- (D) 40%

18. Imaging of the AV fistula and grafts are done by all except

- (A) X ray
- (B) Doppler ultrasonography
- (C) Magnetic resonance angiography
- (D) Access angiography

19. Dialysis patients have lowest mortality risk with a predialysis serum potassium level of (mmol/L)

- (A) 5.0 – 5.5
- (B) 2.0 – 2.5
- (C) 6.0 – 6.5
- (D) 7.0 – 7.5

20. Usually dialysis is initiated in CKD V patients when the eGFR/1.73m<sup>2</sup> decreases to about

- (A) 8 ml/min
- (B) 25 ml/min
- (C) 30 ml/min
- (D) 27.5 ml/min

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21. The concentration of Potassium in PD fluid is

- (A) Zero
- (B) 2 Meq/L
- (C) 2.2 Meq/L
- (D) 3 Meq/L

22. All the followings are LMWH compounds except

- (A) Dalteparin
- (B) Nadroparin
- (C) Fondaparinux
- (D) Enoxaparin

23. All of the following are used in conservative management of hyperkalemia except

- (A) Nebulisation
- (B) Calcium gluconate
- (C) Insulin and dextrose
- (D) Magnesium sulphate

24. Calcium concentration in Dialysis solution is (meq/L)

- (A) 4.5 – 5.5
- (B) 1.0 – 1.25
- (C) 2.5 – 3.0
- (D) 125 – 145

25. Ideal shape of a storage tank in water treatment plant is

- (A) conical with apex at the bottom
- (B) conical with apex at the top
- (C) cylindrical
- (D) square

26. Air embolism during hemodialysis is mainly prevented by

- (A) Venous line air trap and detector
- (B) Arterial line air trap and detector
- (C) Dialyzer
- (D) Vascular access

27. AV fistula infections are usually caused by

- (A) Staphylococcus
- (B) Pneumococcus
- (C) Virus
- (D) Protozoa

28. The dose of LMWH is expressed in

- (A) Antifactor Xa Institute Choay units
- (B) Antifactor IX Institute Choay units
- (C) Antifactor II Institute Choay units
- (D) Antifactor XIIa Institute Choay units

29. What is the difference between diet for peritoneal dialysis (PD) and hemodialysis (HD) patients?

- (A) More Calories in PD
- (B) More Proteins in PD
- (C) More Calcium in PD
- (D) More Carbohydrates in PD

30. The heparin half life in dialysis patients is

- (A) 48 hours
- (B) 5 – 8 hours
- (C) 10 – 12 hours
- (D) 30 minutes – 2 hours



31. The Sodium concentration in a hemodialysis solution is usually between (Meq/L)

- (A) 155 – 165
- (B) 165 – 175
- (C) 115 – 125
- (D) 135 – 145

32. Puncture of the Internal Jugular vein is preferred by which technique?

- (A) USG guidance
- (B) Blind puncture
- (C) CT guidance
- (D) MRI guidance

33. In routine heparin, constant infusion method, heparin infusion is given at the rate of (per hour)

- (A) 1200 units
- (B) 3000 units
- (C) 4000 units
- (D) 5000 units

34. Which of the following is the least common cause of intradialytic hypotension?

- (A) Antihypertensive medication
- (B) Anaemia
- (C) Pericardial tamponade
- (D) Excessively low target (dry) weight

35. Signs of clotting in the extracorporeal circuit are all except

- (A) Extremely light coloured blood
- (B) Shadows or black streaks in the dialyzer
- (C) Teetering
- (D) Rapid filling of transducer monitors with blood

36. The Urine output in the Risk Stage of RIFLE criteria is

- (A)  $< 0.3$  ml/kg/hr for 24 hours
- (B) Anuria for 12 hours
- (C)  $< 0.5$  ml/kg/hr for 6 hours
- (D)  $< 0.5$  ml/kg/hr for 12 hours

37. All of the following are complications of Plasmapheresis except

- (A) Hypotension
- (B) Bleeding
- (C) Hypercalcemia
- (D) Anaphylaxis (FFP)

38. The heparin infusion line is situated in the

- (A) Pre pump segment
- (B) Post pump segment
- (C) Venous line
- (D) Dialyzer

39. The endotoxin level in ultrapure water is below (EU/ml)

- (A) 0.03
- (B) 0.05
- (C) 0.07
- (D) 0.5

40. All may be the complications of Internal Jugular Catheter Insertion except

- (A) Hemothorax
- (B) Pneumothorax
- (C) Retroperitoneal hemorrhage
- (D) Arterial Puncture

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41. Darbopoietin alfa has a half life of  
(A) 2 – 4 hours  
(B) 30 minutes to 1 hour  
(C) 25 – 50 hours  
(D) 8 hours
42. The standard volume of CAPD bag in adult is  
(A) 2 lit  
(B) 4 lit  
(C) 500 ml  
(D) 750 ml
43. The recommended dose of Hepatitis B vaccine in CKD patients on each session is  
(A) 40 mcg  
(B) 20 mcg  
(C) 10 mcg  
(D) 50 mcg
44. Bleach is  
(A) Sodium hypochlorite  
(B) Potassium hypochlorite  
(C) Magnesium hypochlorite  
(D) Formaldehyde
45. Causes of intradialytic hypotension are all except  
(A) Large weight gain  
(B) Short weekly dialysis time  
(C) Excessively high target dry weight  
(D) Anaemia
46. The recommended protocol to prevent air embolism after removal of dialysis catheters from the neck are all except  
(A) no heparin on the day of planned removal.  
(B) patient in head up position during catheter removal.  
(C) Air occlusive dressing.  
(D) None of the above
47. The Molecular weight of beta 2 microglobulin is  
(A) 11800  
(B) 12800  
(C) 13800  
(D) 14800
48. URR is expressed as  
(A) a percentage  
(B) M mol/L  
(C) Mg/dl  
(D) Meq/L
49. The lock commonly used with heparin in double lumen hemodialysis catheter lumen is  
(A) Gentamycin  
(B) Ciprofloxin  
(C) Ceftriaxone  
(D) Meropenem
50. Deionzers remove all except  
(A) Calcium  
(B) Aluminium  
(C) Fluoride  
(D) Endotoxins



51. Conductivity is measured in terms of  
(A) Milli Siemens per cm  
(B) Milli Siemens per second  
(C) Millilitres per cm  
(D) Millilitres per second
52. The temporary access that is usually avoided if AV fistula is planned on same side:  
(A) Subclavian  
(B) Internal jugular  
(C) Femoral  
(D) External jugular
53.  $eKt/v$  is  
(A) more than  $spKt/v$   
(B) less than  $spKt/v$   
(C) equal to  $spKt/v$   
(D) None of the above
54. The normal range for Serum phosphorus is (mg/dl)  
(A) 9 – 11  
(B) 135 – 145  
(C) 8 – 10  
(D) 2.7 – 4.6
55. A commonest complication while doing an internal jugular access is  
(A) Recurrent laryngeal nerve palsy  
(B) Arterial puncture  
(C) Hemothorax  
(D) Pneumothorax
56. The duration of the disease required for declaring chronic kidney disease is  
(A) 1 month  
(B) 2 months  
(C) 3 months  
(D) 4 months
57. The volume of dialysis solution the patients are exposed during each dialysis treatment is  
(A) 400 – 500 L  
(B) 120 – 200 L  
(C) 50 – 100 L  
(D) 600 – 700 L
58. Two bags with a Y Set System using flush – before – fill technique is used in  
(A) CAPD  
(B) Hemodialysis  
(C) SLED  
(D) SCUF
59. Which of the following is not a component of Juxtaglomerular apparatus?  
(A) Macula densa  
(B) Extraglomerular mesangium  
(C) Terminal portion of the afferent arteriole  
(D) Collecting duct
60. The most common cause of chronic kidney disease is  
(A) Diabetes  
(B) Hypertension  
(C) Glomerulonephritis  
(D) Polycystic kidney disease



61. The ion that is required for the coagulation process is
- (A) Sodium
  - (B) Potassium
  - (C) Calcium
  - (D) Magnesium
62. Which of the following drug can cause acute rise of creatinine?
- (A) Amikacin
  - (B) Calcium Carbonate
  - (C) Amlodipin
  - (D) Metoprolol
63. The effectiveness of Hepatitis B vaccination can be measured by
- (A) AntiHBs titre
  - (B) HBsAg titre
  - (C) HBeAg titre
  - (D) HBcAg titre
64. BCM is used to measure
- (A) Dialyzer efficacy
  - (B) Dry weight
  - (C) Bone mineral density
  - (D) Water quality
65. All of the following may cause hemolysis during dialysis except
- (A) Kinked blood line tubing
  - (B) Chloramine
  - (C) Calcium
  - (D) Copper
66. Which of the following is not nephrotoxic?
- (A) Amikacin
  - (B) Gentamycin
  - (C) Diclofenac
  - (D) Amlodipin
67. The 'empty bed contact time' of the water with the carbon must be at least
- (A) 2 hours
  - (B) 50 minutes
  - (C) 10 minutes
  - (D) 5 hours
68. We usually normalize GFR to body surface area
- (A) per  $2.5\text{m}^2$
  - (B) per  $0.5\text{m}^2$
  - (C) per  $1\text{m}^2$
  - (D) per  $1.73\text{m}^2$
69. Dialysate flow rate is zero ml/min in
- (A) SCUF
  - (B) SLED
  - (C) Hemodialysis
  - (D) Continuous hemodiafiltration
70. Which of the following is true regarding nocturnal intermittent peritoneal dialysis (NIPD)?
- (A) In day time abdomen is kept dry
  - (B) There is a long day dwell
  - (C) There is a morning day dwell
  - (D) There is an evening day dwell



71. Excess Aluminium in water causes all except

- (A) Ventricular fibrillation
- (B) Dialysis encephalopathy syndrome
- (C) Anaemia
- (D) Bone disease

72. High flux dialyzers usually have

- (A) KoA > 20ml/h/mmHg
- (B) KUF > 20ml/h/mmHg
- (C) KoA < 8ml/h/mmHg
- (D) KUF < 8ml/h/mmHg

73. Argatroban is a

- (A) Heparinoid
- (B) LMWH
- (C) Heparin
- (D) Thrombin inhibitor

74. In Nocturnal Hemodialysis, the duration per session is

- (A) 6 – 10 hours
- (B) 24 hours
- (C) 1.5 – 3 hours
- (D) 4 hours

75. The CKD 5 patients, in HDF treatment, the UF volume in post dilution mode, per treatment should be targeted to

- (A) 100 L
- (B) 20 – 24 L
- (C) 1 – 2 L
- (D) 3 – 5 L

76. The dialysate temperature should be in the range of

- (A) 36.5 – 38.5C
- (B) 34.5 – 36.5C
- (C) 38.5 – 40.5C
- (D) 40.5 – 42.5C

77. Increased delivery of NaCl to the macula densa causes:

- (A) Vasodilation of afferent arteriole
- (B) Vasoconstriction of afferent arteriole
- (C) Vasoconstriction of efferent arteriole
- (D) None of the above

78. Factors favouring clotting of the extracorporeal circuit are all except

- (A) low ultrafiltration rate
- (B) low blood flow
- (C) high hematocrit
- (D) intradialytic lipid infusion

79. DRIL procedure is used to treat

- (A) Catheter related blood stream infection
- (B) CAPD peritonitis
- (C) Ischemia in AV fistula hand
- (D) an AV fistula pseudoaneurysm

80. High Serum Alkaline Phosphatase in combination with elevated serum PTH is an indication of

- (A) Hyperactive parathyroid gland
- (B) Hypoactive parathyroid gland
- (C) Hyperthyroidism
- (D) Hypothyroidism

Please Turn Over



81. In Cockcroft–Gault equation, the multiplication factor used if the sex is female is

- (A) 0.85
- (B) 1.75
- (C) 1.154
- (D) 1.210

82. Brescia–Cimino fistula is

- (A) Radiocephalic
- (B) Snuffbox
- (C) Ulnar artery to basilic vein
- (D) Brachial artery to cephalic vein

83. Absolute indications for initiation of dialysis are all except

- (A) Intractable volume overload
- (B) Hypokalemia
- (C) Severe hyperkalemia refractory to conservative treatment
- (D) Metabolic acidosis refractory to conservative treatment

84. Indications of Heparin free dialysis are all except

- (A) Eye Surgery
- (B) Pericarditis
- (C) Kidney biopsy done 1 day back
- (D) Normal PT, APTT and platelet count

85. The length of the dialysis session in first dialysis is

- (A) 2 hours
- (B) 4 hours
- (C) 4 and half hours
- (D) 5 hours

86. Which of the following site is usually avoided for doing temporary access in a patient planned for renal transplant?

- (A) Right femoral
- (B) Right internal jugular
- (C) Left internal jugular
- (D) Left femoral

87. All of the following membranes are synthetic except

- (A) Polysulfone
- (B) Cellulose
- (C) PAN
- (D) PMMA

88. The usual no. cuffs in a CAPD catheter is

- (A) 1
- (B) 2
- (C) 3
- (D) 4

89. The left kidney is approximately at the vertebral level of

- (A) T12 – L3
- (B) L4 – L5
- (C) D3 – D6
- (D) S4 – S5

90. Which of the following can be given to prevent hypotension during dialysis?

- (A) Beta blockers
- (B) ACE inhibitors
- (C) Clonidine
- (D) Sertraline



91. Hydronephrosis is commonly associated with
- (A) Dehydration
  - (B) Snake bite
  - (C) Stone
  - (D) Diabetes
92. The following may be helpful to reduce itching in CKD patients except
- (A) Antihistamines
  - (B) Pregabalin
  - (C) Tacrolimus ointment
  - (D) keeping the skin dry
93. All of the following are advantages of albumin as replacement solution in Plasmapheresis except
- (A) No risk of hepatitis
  - (B) No concern about ABO blood group
  - (C) Allergic reaction are rare
  - (D) Supplies coagulation factors
94. A hemodialysis patient suddenly develops trouble breathing, hives, itching and hypotension. The most likely cause is
- (A) an air embolism
  - (B) an anaphylactic reaction
  - (C) Angina
  - (D) Disequilibrium syndrome
95. The difference in the diet of a Hemodialysis patient and a predialysis patient is
- (A) more protein intake in hemodialysis patient.
  - (B) more potassium intake in hemodialysis patient.
  - (C) more sodium intake in hemodialysis patient.
  - (D) more calcium intake in hemodialysis patient.
96. Erythropoietin therapy should not be started until the hemoglobin falls below
- (A) 10g/dl
  - (B) 11g/dl
  - (C) 12g/dl
  - (D) 13g/dl
97. The osmotic agent used in PD solutions is
- (A) Sodium Chloride
  - (B) Sodium Bicarbonate
  - (C) Calcium Chloride
  - (D) Glucose
98. Which of the following is not the predisposing factor for muscle cramp?
- (A) Normal or high Sodium dialysis solution
  - (B) Hypotension
  - (C) Hypovolemia
  - (D) High ultrafiltration rate
99. The first measure taken in case of severe hypotension during hemodialysis is
- (A) stop ultrafiltration
  - (B) raise foot end of bed
  - (C) infuse 25% Dextrose
  - (D) infuse Mannitol
100. The normal range for Serum calcium is (mg/dl)
- (A) 8.4 – 10.2
  - (B) 1 – 2
  - (C) 2 – 3
  - (D) 5 – 6



## Space for Rough Work

AL