

# Sikkim Public Service Commission

## Main Written Examination for the Post of Haemodialysis Technician under Sikkim State Subordinate Allied and Healthcare Service

### PAPER -II

Time allowed: 3.00 Hrs

Maximum Marks: 100

#### INSTRUCTIONS TO CANDIDATES

Read the instructions carefully before answering the questions: -

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS BOOKLET DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
2. Use only Black Ball Point Pen to fill the OMR Sheet.
3. Do not write anything else on the OMR Answer Sheet except the required information.
4. This Test Booklet contains 50 questions in MCQ Mode in Part I to be marked in OMR Sheet. Part II and Part III are Subjective Questions which have to be written on separate answer sheet provided to you.
5. Before you proceed to mark in the Answer Sheet (OMR), you have to fill in some particulars in the Answer Sheet (OMR) as per given instructions.
6. After you have completed filling in all your responses on the Answer Sheet (OMR) and the examination has concluded, you should hand over the Answer Sheet (OMR) and separate answer sheet to the Invigilator only. You are permitted to take with you the Test Booklet.
7. **Marking Scheme**

THERE WILL BE NEGATIVE MARKING FOR WRONG ANSWERS MARKED BY A CANDIDATE IN THE OBJECTIVE TYPE QUESTION PAPERS

- i. There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, one-third of the marks assigned to the question will be deducted as penalty.
- ii. If a candidate gives more than one answer, it will be treated as a wrong answer even if one of the given answers happens to be correct and there will be same penalty as above to the question.
- iii. If a question is left blank. i.e., no answer is given by the candidate, there will be no penalty for that question.

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

## **PART - I**

**Choose the correct answer for the following questions:**

**(1x50=50)**

**(1) Which of following is not part of Nephron:**

- A. Glomerulus
- B. Proximal convoluted tubule
- C. Middle convoluted tubule
- D. Distal convoluted tubule

**(2) Which hormone is secreted by kidney:**

- A. Renin
- B. Aldosterone
- C. Thyroxine
- D. Growth Hormone

**(3) What is normal GFR in adult humans:**

- A. 90 ml/minute
- B. 120 ml/minute
- C. 100 ml/minute
- D. 80 ml/minute

**(4) Most common cause of chronic kidney disease:**

- A. Diabetes mellitus
- B. Hypertension
- C. ADPKD
- D. Glomerulonephropathy

**(5) Chronic kidney is defined as derangement of renal function for more than:**

- A. 1 month
- B. 2 months
- C. 3 months
- D. 4 months

**(6) Which is not a part of Nephrotic syndrome:**

- A. Proteinuria .5 gm/24 hours
- B. Hypoalbuminemia
- C. Oedema
- D. Hyperkalaemia



**(7) Gold standard method of Glomerular Filtration Rate (GFR) estimation is:**

- A. Creatinine clearance
- B. Inulin clearance
- C. PAH clearance
- D. Urea clearance

**(8) Who is called father of dialysis:**

- A. Willem John Koiff
- B. Richard Bright
- C. Petar Medawar
- D. Tarasaki

**(9) Basic principal of haemodialysis is:**

- A. Diffusion
- B. Convection
- C. Conduction
- D. none of these

**(10) What is recommended frequency of dialysis:**

- A. Once a week
- B. Twice a week
- C. Thrice a week
- D. Four times a week

**(11) Which of following is not a vascular access for haemodialysis:**

- A. AV Fistula
- B. AV Graft
- C. Temporary catheter
- D. Peritoneal membrane

**(12) Which is not a material of dialyzer:**

- A. Polysulfonate
- B. Polyester
- C. Polycarbonate
- D. Polyamide

**(13) What is duration of conventional dialysis:**

- A. 2 hours
- B. 3 hours
- C. 4 hours
- D. 5 hours

**(14) What are various safety monitors of haemodialysis machine:**

- A. Pressure monitor
- B. Air detector
- C. Blood leak monitor
- D. All of these

**(15) Which anticoagulant is used during dialysis:**

- A. Heparin
- B. Citrate
- C. LMWH
- D. All of these

**(16) What is normal component of dialysis machine:**

- A. Blood pump
- B. Pressure monitor
- C. Dialyzer
- D. All of these

**(17) Commonly used dialysis solution:**

- A. Acetate
- B. Bicarbonate
- C. Both
- D. None of these

**(18) Which of the following is modality of dialysis:**

- A. Haemodialysis
- B. Hemodiafiltration
- C. Hemofiltration
- D. All of these

**(19) Which is preferred anticoagulant during increased bleeding risk patient:**

- A. Regional citrate anticoagulant
- B. Heparin
- C. Low molecular weight Heparin
- D. Danaparoid

**(20) Which of the following is composition of dialyzer membrane:**

- A. Cellulose
- B. Substituted cellulose
- C. Synthetic polymer
- D. All of these



**(21) Normal blood pump rate during dialysis:**

- A. 200-300 ml/minute
- B. (b)50-100 ml/minute
- C. (c)400-500 ml/minute
- D. (d) 600-700 ml/minute

**(22) What is KDOQI recommendations for weekly Kt/V for haemodialysis adequacy;**

- A. 2.5
- B. 2.9
- C. 1.5
- D. 2.1

**(23) Which is not a component of normal dialysate solution:**

- A. Sodium
- B. Calcium
- C. Magnesium
- D. Cadmium

**(24) Which of the following is/are complications of haemodialysis:**

- A. Hypotension
- B. Hypertension
- C. Muscle cramps
- D. All of these

**(25) Which is immediate treatment of intradialytic hypotension:**

- A. Stopping ultrafiltration
- B. Infusion of saline bolus
- C. Elevating patient's legs
- D. All of these

**(26) Which is complication of AV Fistula:**

- A. Aneurysm
- B. Bleeding
- C. Thrombosis
- D. All of these

**(27) Which is not a neurological complication of haemodialysis:**

- A. Restless leg syndrome
- B. Dialysis disequilibrium
- C. Muscle cramps
- D. Dialysis associated steal syndrome

**(28) Type A reaction usually occurs after \_\_\_\_\_ of dialysis initiation:**

- A. 5-20 minutes
- B. 1 Hour
- C. 2 Hours
- D. 4 Hours

**(29) First use reaction of dialysis occurs due to:**

- A. Ethylene Oxide (ETO)
- B. Formaldehyde
- C. Glutaraldehyde
- D. Renalin

**(30) What is AAMI standard for dialysis water treatment for microorganisms (CFU/ml) and Endotoxins (EU/ml):**

- A. < 200CFU & 2 EU/ml
- B. < 300CFU & 3 EU/ml
- C. < 400CFU & 4 EU/ml
- D. < 500CFU & 5 EU/ml

**(31) Common site of temporary dialysis catheter insertion:**

- A. Internal Jugular
- B. Femoral
- C. Subclavian
- D. All of these

**(32) What is maximum urea reduction ratio (URR) required during haemodialysis:**

- A. 65-70%
- B. 35-40%
- C. 80-85%
- D. 50-55%

**(33) Which of the following is middle molecular weight uremic solute:**

- A. Hippuric acid
- B. Creatinine
- C. B2 Microglobulin
- D. Guanidine

**(34) Treatment for muscle cramp during haemodialysis;**

- A. Hypertonic Saline
- B. 25% Mannitol
- C. 50% Dextrose
- D. All of these



**(35) Which is not an indication for starting dialysis:**

- A. Resistant Hyperkalaemia
- B. Resistant metabolic acidosis
- C. Resistant volume overload
- D. Resistant Hypophosphatemia

**(36) Which of the following is continuous dialysis modality:**

- A. CVVH
- B. CVVHD
- C. CVVHDF
- D. All of these

**(37) What is classical model of peritoneal dialysis:**

- A. 2 Pore model
- B. 3 Pore model
- C. 4 Pore model
- D. 5 Pore model

**(38) What is various glucose concentration in PD solution:**

- A. 1.5%
- B. 2.5%
- C. 4.5%
- D. All of these

**(39) Various techniques of peritoneal dialysis catheter insertion is/are:**

- A. Seldinger technique
- B. Laparoscopic
- C. Peritoneoscopic
- D. All of these

**(40) Recommended weekly Urea Kt/V for CAPD is:**

- A. 1.5
- B. 1.6
- C. 1.7
- D. 1.8

**(41) Recommended weekly creatinine clearance for CAPD is:**

- A. > 50L/1.73 m<sup>2</sup>
- B. > 60L/1.73 m<sup>2</sup>
- C. >70L/1.73 m<sup>2</sup>
- D. > 80L/1.73 m<sup>2</sup>

**(42) Which of the following is not an early complication of PD catheter insertion:**

- A. Inflow pain
- B. Outflow pain
- C. Fluid leak
- D. Encapsulating peritoneal sclerosis

**(43) Metabolic complications of peritoneal dialysis include:**

- A. Protein loss
- B. Glucose load
- C. Dyslipidaemia
- D. All of these

**(44) Most common organism for exit site infection for CAPD is:**

- A. Streptococcus
- B. (2) E. Coli
- C. Staphylococcus aureus
- D. Klebsiella

**(45) Diagnostic criteria for CAPD peritonitis in PD fluids:**

- A. > 100WBC/mm<sup>2</sup>
- B. > 200WBC/mm<sup>2</sup>
- C. > 300WBC/mm<sup>2</sup>
- D. >400WBC/mm<sup>2</sup>

**(46) Common organism involved in CAPD peritonitis in PD fluids:**

- A. Gram positive
- B. Gram negative
- C. both
- D. None of these

**(47) Transport along peritoneum during peritonitis:**

- A. Increases
- B. Decreases
- C. Unchanged
- D. Increases then decreases

**(48) Ultrafiltration failure is defined as ultrafiltrate volume with 4.5% Glucose:**

- A. < 400 ml
- B. < 300 ml
- C. < 200 ml
- D. < 100 ml



(49) Standard treatment duration for CAPD peritonitis is:

- A. 2-3 weeks
- B. 4-5 weeks
- C. 7 days
- D. 10 days

(50) Which of the following solution is used for CAPD;

- A. Glucose based
- B. Icodextrin
- C. Amino acid based
- D. all of these

### PART -II

Answer ANY FOUR of the following:

(5X4=20)

- (1) Enumerate and describe in brief various anticoagulants used during procedure of Haemodialysis.
- (2) How will you manage a patient of intra dialytic hypotension?
- (3) Describe dialyzer reuse
- (4). Precautions to be taken during haemodialysis of HIV positive patients
- (5) Describe various dialyzer membranes.
- (6) Enumerate sites of temporary dialysis catheter insertion including preference of insertion and indication of each of them.

### PART -III

Attempt ANY TWO of the following:

(15X2=30)

- (1) Describe various acute complications encountered during haemodialysis procedure.
- (2) What is physiological mechanism of haemodialysis. Describe various components of haemodialysis machine including safety monitors.
- (3) Describe various steps involved in maintenance of proper hygiene in dialysis room.
- (4) Describe various complications of Continuous Ambulatory Peritoneal Dialysis.