Question Booklet Alpha Code



**Total Number of Questions : 100** 

Question Booklet Serial Number

Time : 75 Minutes

Maximum Marks : 100

- 1. The question paper will be given in the form of a Question Booklet. There will be four versions of question booklets with question booklet alpha code viz. **A**, **B**, **C** & **D**.
- 2. The Question Booklet Alpha Code will be printed on the top left margin of the facing sheet of the question booklet.
- 3. The Question Booklet Alpha Code allotted to you will be noted in your seating position in the Examination Hall.
- 4. If you get a question booklet where the alpha code does not match to the allotted alpha code in the seating position, please draw the attention of the Invigilator IMMEDIATELY.
- 5. The Question Booklet Serial Number is printed on the top right margin of the facing sheet. If your question booklet is un-numbered, please get it replaced by new question booklet with same alpha code.
- 6. The question booklet will be sealed at the middle of the right margin. Candidate should not open the question booklet, until the indication is given to start answering.
- 7. Immediately after the commencement of the examination, the candidate should check that the question booklet supplied to him contains all the 100 questions in serial order. The question booklet does not have unprinted or torn or missing pages and if so he/she should bring it to the notice of the Invigilator and get it replaced by a complete booklet with same alpha code. This is most important.
- 8. A blank sheet of paper is attached to the question booklet. This may be used for rough work.
- 9. Please read carefully all the instructions on the reverse of the Answer Sheet before marking your answers.
- 10. Each question is provided with four choices (A), (B), (C) and (D) having one correct answer. Choose the correct answer and darken the bubble corresponding to the question number using Blue or Black Ball Point Pen in the OMR Answer Sheet.
- 11. Each correct answer carries 1 mark and for each wrong answer 1/3 mark will be deducted. No negative mark for unattended questions.
- 12. No candidate will be allowed to leave the examination hall till the end of the session and without handing over his/her Answer Sheet to the Invigilator. Candidates should ensure that the Invigilator has verified all the entries in the Register Number Coding Sheet and that the Invigilator has affixed his/her signature in the space provided.
- 13. Strict compliance of instructions is essential. Any malpractice or attempt to commit any kind of malpractice in the Examination will result in the disqualification of the candidate.

A

1.	Num	ber of official lan	iguage	s included	in the	e VIII <sup>tl</sup>	<sup>n</sup> schedule of the	e Indiar	Constitution :	
	(A)	20	(B)	22		(C)	21	(D)	18	
2.	2. Who raised the slogan 'No caste, No religion, No God for man' ?									
	(A)	Sree Narayana (	Guru		(B)	Chat	tampi Swamika	1		
	(C)	Sahodaran Ayya	appan	l	(D)	Ayya	ankali			
	. ,				. ,					
3.	Which of the following publication was known as the 'bible of the socially depressed classes' ?									
	(A)	Al-Ameen			(B)	Vive	kodayam			
	(C)	Kesari			(D)	Mith	avadi			
	· /				~ /					
4.	The	first Christian mis	ssiona	ry group ai	rived	in Ke	rala :			
	(A)	Jesuits			(B)	CMS	5			
	(C)	Salvation Army			(D)	Base	l Evangelical Mi	ssion		
	. ,	·			. ,		0			
5.	The	oldest existing Ma	alayala	am newspa	per :					
	(A)	Mathrubhumi	2	-	(B)	Mala	yala Manorama	1		
	(C)	Kerala Kaumud	i		(D)	Deer	oika			
	( )				( )	1				
6.	The	ruler who made [	Гетрl	e entry pro	clama	tion i	n Travancore in	1936 :		
	(A)	Sri Moolam Thii	runal	5 1	(B)	Aayi	lyam Thirunal			
	(C)	Sree Chithira Th	niruna	1	(D)	Seth	u Lakshmi Bhai			
	. ,				. ,					
7.	The	leader of Guruva	yur Sa	ityagraha v	vas :					
	(A)	K. Kelappan		5 0	(B)	T.K.	Madhavan			
	(C)	C. Kesavan			(D)	Man	nath Padmanab	han		
	· /				~ /					
8.	Whie	ch of the followin	g Cou	ntry decide	ed to c	uit th	e European Uni	on in tl	ne last year ?	
	(A)	Germany	(B)	France		(C)	Italy	(D)	England	
	( )	5	( )			( )	5		0	
9.	The <sup>•</sup>	winner of Austral	lian O	pen Tennis	men's	s singl	les title - 2017 :			
	(A)	Rafel Nadal		L	(B)	Roge	er Federer			
	(C)	Andv Murrav			(D)	Nova	ak Diokovic			
	(-)	111009 1110011009			(2)	1.0.1				
10.	Whi Trav	ch woman freec ancore, ?	lom f	ighter wa	s des	cribed	d by Gandhiji	as 'Th	e Jhansi Rani of	
	(A)	Rosamma Punne	ose		(B)	Akka	amma Cherivan			
	(C)	Annie Mascaren	ne		(D)	A.V.	Kuttimalu Amr	na		
	(-)		-		(~)	• •				

- **11.** The motion of an iron ball falling down under the action of gravity near the surface of the earth is :
  - (A) uniform velocity (B) uniform acceleration
  - (C) non-uniform acceleration (D) uniform retardation
- 12. Two object are said to have perfectly elastic collision when, before and after collision, their :
  - (A) momentum and kinetic energy are conserved
  - (B) momentum is conserved and kinetic energy is not conserved
  - (C) momentum is not conserved and kinetic energy is conserved
  - (D) momentum and kinetic energy are not conserved
- **13.** The process involved in the sudden bursting of cycle tyre is :
  - (A) isochoric process (B) isothermal process
  - (C) adiabatic process (D) isobaric process
- **14.** The temperature at which the reading on the Celsius scale of temperature and Fahrenheit scale of temperature becomes equal :
  - (A) -30 degree (B) -20 degree (C) -50 degree (D) -40 degree
- 15. Fundamental equation that relates fluid pressure, fluid velocity and fluid height is :
  - (A) Equation of continuity (B) Bernoulli's theorem
  - (C) Stoke's law (D) Archimede's principle
- **16**. The resistance of a conductor depends on :
  - (A) length of the conductor
  - (B) area of cross-section of the conductor
  - (C) material of the conductor
  - (D) all of the above
- 17. The vibrant colours seen on the surface of thin oil films on the surface of water is due to :
  - (A) interference of light (B) refraction of light
  - (C) dispersion of light (D) scattering of light
- **18.** An example of universal gate is :
  - (A) NOT gate (B) AND gate (C) OR gate (D) NOR gate
- **19.** The increasing order of frequency of electromagnetic wave is :
  - (A) X-ray, gamma ray, radio wave, micro wave
  - (B) gamma ray, radio wave, X-ray, micro wave
  - (C) radio wave, micro wave, X-ray, gamma ray
  - (D) micro wave, gamma ray, radio wave, X-ray

- 20. When a double convex lens with refractive index 1.5, is immersed in a solution of Carbon disulphide with refractive index 1.62, the focal length of this lens becomes ?
  - negative (A) more positive (B)
  - (C) zero (D) infinite
- 21. Albumin, Globulin and Fibrinogen are :
  - Intestinal enzymes (B) **Plasma** Proteins (A)
  - (C) Carbohydrates (D) Pituitary hormones
- 22. Select the parts of nephron from the following :
  - (A) Henle's loop and Bowman's capsule
  - (B) Axon and Dendron
  - (C) Actin filament and myosin filament
  - (D) Collagen and Elastin

#### 23. "Crossing over" during meiosis leads to :

- (A) Gene migration (B) Translation
- (C) Transcription (D) Gene recombination

#### 24. Find out the character of mammals from the following :

- (A) Poikilo thermous (B) Pneumatic bone
- (C) Hairy Exoskeleton (D) Water vascular system

#### 25. Which of the following is a Protozoan disease?

- Typhoid fever Pneumonia (A) (B)
- (D) Common Cold (C) Malaria

#### Hormones show "Antagonistic effects" are : 26.

- (A) Adrenalin and Nor adrenalin (B) Insulin and Glucagon
- (C) Calcitonin and Thyroxin (D) Oxytocin and Vasopressin

#### 27. Who proposed the double helical structural model to DNA ?

- (A) Sutton and Boveri (B) Hershey and Chase
- (C) T.H. Morgan (D) James Watson and Francis Crick
- Azotobacter and Azospirillum are : 28.
  - (A) Bio fertilizers (B)
  - (C) Source of narcotic drugs

116/2017 {**P.T.O.**}

- Bio control agents
- (D) Plant Pathogens

Α

29.	Selec (A) (C)	Iect the method of Exitu Conservation of(I)Sacred groves(I)Zoological park(I)					odiversity from the following : National park Biosphere reserve				
30.	Pept (A)	tide bond is found Protein	1 in : (B)	Glycogen		(C)	Starch	(D)	Nucleic acids		
31.	Nun (A) (C)	nber of electrons $6.022 \times 10^{23}$ $6.022 \times 10^{24}$	preser	nt in 1 mol F	H <sub>2</sub> O is (B) (D)	: 18 × 18	$6.022 \times 10^{23}$				
32.	pH o (A)	of .1 Molar NaOF 1	H solu (B)	tion assumii 13	ng cor	nplete (C)	ionization is : 14	(D)	None		
33.	Dun (A)	na's method is us Nitrogen	ed for (B)	estimation Sulphur	of :	(C)	Halogen	(D)	Phosphorous		
34.	Whi (A)	ch of the followir Mass	ng is a (B)	n intensive Volume	prope	rty ? (C)	Density	(D)	Heat Capacity		
35.	The (A)	rate constant of a 1	a react (B)	ion is 2.5 × 0	10 <sup>-4</sup> S	5 <sup>-1</sup> . T (C)	he order of the re 2	eactior (D)	n is : 3		
36.	Nun (A)	nber of electrons	possił (B)	ole in a quan 4	itum l	evel w (C)	vith 1=2 : 8	(D)	10		
37.	Whi (A)	ch of the followir H <sub>3</sub> PO <sub>4</sub>	ng is a (B)	tribasic acio H <sub>3</sub> PO <sub>3</sub>	d ?	(C)	H <sub>3</sub> PO <sub>2</sub>	(D)	All		
38.	Shap (A)	pe of X <sub>e</sub> F <sub>2</sub> molecu See Saw	ıle is : (B)	Linear		(C)	Square planar	(D)	Octahedral		
39.	Whi (A)	ch of the followir Ethanol	ng con (B)	npounds wi Ethanal	ll not	under (C)	go Iodoform test Propanone	? (D)	Propanal		
40.	Whi (A)	ch of the followir NH <sub>3</sub>	ng is r (B)	iot a nucleoj H <sub>2</sub> O	ohile ?	, (C)	BF <sub>3</sub>	(D)	OH-		
41.	The (A) (B) (C) (D)	three steps of uri Glomerular filt Filtration, reabs Filtration, reabs Clearance, glon	ne for cation, corptic corptic nerula	rmation are diffusion, u on, ultrafiltr on, secretion r filtration,	: ultrafi ation ultrafi	ltratio iltratio	n on				

A

42.	What is the normal adult glomerular filtration rate ?									
	(A)	99 ml/hr	(B)	2000 ml/day	(C)	80 ml/hr	(D)	125 ml/min		
43.	All of the following are functions of the kidney EXCEPT :									
	(A) Regulation of acid base balance									
	(B) Maintenance of fluid balance									

- (C) Elimination of metabolic waste
- (D) Release of aldosterone
- **44**. Diffusion is the movement of :

- (A) Solute from an area of high concentration to an area of low concentration
- Solute from an area of low concentration to an area of high concentration (B)
- (C) Solvent from an area of low concentration to an area of high concentration
- (D) Solvent from an area of high concentration to an area of low concentration
- **45**. An elevated serum potassium is when the level is above : (C) 2.0 mEq/L(A) 2.5 mEq/L(B) 4.0 mEq/L(D) 5.5 mEq/L

#### Acidosis is defined when pH falls below : **46**.

(A)	Less than 7.35	(B)	Less than 7.45
(C)	Less than 7.55	(D)	Less than 8.0

- 47. Primary cause of anemia in CKD is :
  - (A) Erythropoetin deficiency (B) Iron deficiency
  - (C) Blood loss (D) Folate deficiency
- **48**. The list below indicates reasons for malnutrition in chronic renal failure. Of these which one is considered to be the major cause of malnutrition ?
  - (A) Metabolic derangements
  - Dialysis associated catabolism (B)
  - (C) Uremic toxins
  - (D) Decreased nutrient intake

In hemodialysis the removal of urea from the patient is Primarily due to the existence of : **49**.

- (A) Osmotic pressure (B) Hydrostatic pressure
- (C) Electrical gradient (D) Concentration gradient
- 50. The optimum value for the dialysis solution flow rate is \_\_\_\_\_\_ times the blood flow rate.
  - (B) 2.0 2.5 (C) 1.5 - 2.0 (D) 2.5 - 3.0 (A) 1.0 - 1.5

116/2017 {**P.T.O.**}

Α

- **51.** The first two hemodialysis treatments, for a patient with an extremely elevated BUN, are (purposely) less efficient to primarily prevent which complication ?
  - (A) Rapid decrease in hematocrit
  - (B) Dialysis disequilibrium syndrome
  - (C) Cardiac arrhythmias
  - (D) Excessive anticoagulation
- **52.** Transmembrane pressure consists of which of the following pressure gradients on each side of the dialysis membrane ?
  - (a) Positive pressure on the blood side
  - (b) Negative pressure on the blood side
  - (c) Positive pressure on the dialysate side
  - (d) Negative pressure on the dialysate side
  - (A) (d) only (B) (b) and (d) only
  - (C) (b) and (c) only (D) (a) and (d) only
- **53.** To maintain an optimum gradient between blood and dialysate across the dialyzer membrane which type of blood to dialysate flow is used ?
  - (A) Co-current flow (B) Cross-current flow
  - (C) Counter-current flow (D) Parallel flow
- **54.** The potential for an air embolism to occur during hemodialysis is great. However, the technology today makes it a rare occurrence. What possible reason could there be for this to really happen to your patient ?
  - (A) Disconnected venous needle
  - (B) Disconnected arterial line
  - (C) Malfunctioning air detector
  - (D) Saline bag for infusion depleted
- **55.** The dialysis machine assures the dialysate entering the dialyzer is safe for the patient's treatment. What does it do to assure this ?
  - (A) Regulates the temperature, conductivity, pH, measures pressure and flow, detects a blood leak
  - (B) Alerts the user if something is wrong
  - (C) Bypasses the dialyzer if dialysate is not safe
  - (D) All of the above
- **56.** The movement of water from an area of lower solute concentration to an area of higher solute concentration is called :
  - (A) Diffusion (B) Osmosis (C) Ultrafiltration (D) Dialysis
- 57. The volume of plasma cleared of a given substance per unit of time is the definition of :(A) Clearance(B) Dialysis(C) Dialysance(D) Net flux

A

- **58**. What are the factors to consider when establishing a dry weight for the patient?
  - Blood pressure (A)
  - (B) Patient well being
  - Evidence of dehydration or overload (C)
  - (D) All of the above
- 59. The process by which a large volume of fluid is removed at a rapid rate, with little or no solute removal except by convection is called :
  - (A) Osmosis (B) Hemodialysis
  - (C) Ultrafiltration (D) Isolated or pure ultrafiltration
- **60**. The primary purpose of the proportional pump in a dialysate delivery system is to :
  - (A) Prepare the dialysate in proper pH
  - (B) Prepare the dialysate in proper temperature
  - (C) Prepare the dialysate in proper water to concentrate ratio
  - (D) Deliver the concentrate at the proper rate
- Why is the hemodialysis patient discouraged from eating heavy meals before or during 61. dialysis?
  - (A) May cause hyperkalemia post dialysis
  - Can contribute to vomiting during dialysis (B)
  - (C) May contribute to hypotension
  - All of the above (D)
- 62. Urea clearance is enhanced by :
  - (A) High blood flow rate and high dialysate flow rate
  - (B) Co-current flow
  - (C) A small dialyzer
  - (D) Osmotic pressure gradient
- **63**. What is the national standard for hemodialysis prescription (weekly KT/V) to minimize morbidity/mortality rates ?
  - (A) > 0.8(B) > 0.4(C) > 1.0
- **64**. The regular use of a high sodium dialysate bath may predispose the patient to :
  - (A) Fluid overload Hypertension (B)
  - (C) Thirst (D) All of the above

(D) > 1.2

**65.** Kolff developed the :

- (A) First disposable dialyzer (B) First plate dialyzer
- (C) Scribner shunt (D) Mahurker catheter

66. The capability of a dialyzer to remove fluid expressed as ml/hr/mmHg is called :

- (A) UF- coefficient (B) Clearance
- (C) Surface area (D) Priming volume
- 67. Pre-pump arterial pressure reading is reflective of :
  - (A) The pressure required to pump the blood through the circuit
  - (B) The resistance of the access to the blood flow out of the access device
  - (C) The pressure within the dialyzer
  - (D) None of the above

68. What symptoms might be manifested in the patient experiencing air embolism ?

- (A) Cyanosis, hypotension, burning in the chest
- (B) Chest pain, Shortness of Breath, confusion
- (C) Confusion, cherry red blood
- (D) Hypotension, double vision

69. The appearance of cherry red blood, drop in Hct, hypotension, and chest pain are signs of :

- (A) Residual chemical reaction (B) First use syndrome
- (C) Disequilibrium syndrome (D) Hemolysis
- 70. What determines the surface area of a hollow fiber dialyzer ?
  - (A) Number of fibers (B) Inner diameter
  - (C) Length (D) All of the above

**71**. The most important predisposing factors for muscle cramping during hemodialysis are all EXCEPT :

- (A) Hypovolemia (B) Hypotension
- (C) High sodium dialysis solution (D) High UF rate

116/2017

- 72. All of the following statements concerning "first use syndrome" are true EXCEPT :
  - (A) This is an allergic reaction to new dialyzers
  - (B) Back pain, chest pain and difficulty breathing may be manifested
  - (C) Symptoms are usually manifested within 15 minutes of contact
  - (D) Synthetic membranes are more commonly associated with this syndrome

73. Which of the following statements is/are true concerning disequilibrium syndrome ?

- (a) Most common in severely catabolic cases
- (b) Headaches, confusion and seizures may be manifested
- (c) Occurrence is related to cerebral edema
- (d) Can only be seen in a patient who has never had dialysis before
- (A) (a) only (B) (a) and (d) only
- (C) (a), (b) and (c) only (D) All of the above
- **74.** Who developed the fistula ?

Α

- (A) Turner (B) Scribner
- (C) Quinton (D) Brescia and Cimino
- **75.** What is the purpose of a chest x-ray after the insertion of a dual lumen catheter into a subclavian or jugular vein ?
  - (A) To confirm proper placement of the catheter
  - (B) To confirm patency of the catheter
  - (C) To confirm patency and position
  - (D) To confirm position and absence of pneumothorax
- **76.** Subclavian vein catheterization should be avoided for temporary access in all patients with renal failure due to increased risk of :
  - (A) Central vein stenosis (B) Pneumothorax
  - (C) Infection (D) Difficult insertion
- 77. The measurement of total cell volume (TCV) is used to determine :
  - (A) Performance of the dialyzer (B) Blood leak
    - (C) Contaminants (D) Residual chemical
- **78.** Prior to every patient connection to a hemodialysis machine, the dialysate should be tested for :
  - (A) Colour of the dialysate (B) Electrolyte content
  - (C) Temperature (D) Conductivity and pH

116/2017 {P.T.O.}

- 79. What is the purpose of regional heparinization ?
  - (A) To systematically anticoagulate the patient
  - (B) To give only enough Heparin to keep the dialyzer clear
  - (C) Low dose Heparin
  - (D) To anticoagulate the blood in extracorporeal unit
- **80.** How much protamine sulfate should be given to neutralize Heparin ?
  - (A) 1-1.5 mg protamine/100 u Heparin
  - (B) 2 mg protamine/1000 u Heparin
  - (C) 1 u protamine/1 u Heparin
  - (D) Depends on the patient weight
- 81. Heparinization during hemodialysis can be best monitored by :
  - (A) Bleeding
  - (B) Clotting
  - (C) Whole blood activated clotting time
  - (D) Clotting in dialysis circuit
- **82.** What preventive measures can be practiced in dialysis units to control the incidence of Hepatitis B transmission ?
  - (A) Regular screening of patients and staff
  - (B) Designated area for patients with HbsAg positivity
  - (C) Offering Hepatitis B vaccine to all patients and staff
  - (D) All of the above
- 83. During PD ultrafiltration is accomplished by the utilization of :
  - (A) Hypertonic dialysate (B) Hypotonic dialysate
  - (C) Isotonic dialysate (D) None of the above
- 84. Complications of Heparin therapy include all EXCEPT :
  - (A) Prolonged vascular site bleeding
  - (B) Thrombocytopenia
  - (C) Osteoporosis
  - (D) Chest pain
- **85.** Low Conductivity may be caused by :
  - (A) Inadequate water flow
  - (B) Empty concentrate container
  - (C) Improperly prepared or incorrect concentrate
  - (D) All of the above

86.	Pres	Presence of this ion is responsible for hardness of water :											
	(A)	Fluoride	(B)	Copper		(C)	Nitrates	(D)	Calciun	n			
87.	The	The LAL (Limulus Amebocyte Lysate) assay measures :											
	(A)	(A) Organic impurities				<li>Inorganic impurities</li>							
	(C)	Bacterial count			(D)	Endotoxins							
88.	Whi	ch of the followin	ng met	hods are ι	used to	sed to test the dialyzer to assure its efficacy ?							
	(A)	Total cell volum	ne		(B)	Leak	k test						
	(C)	KUF test			(D)	All o	of the above						
89.	Whi	ch of the followir	ng mei	mbranes u	sed in o	dialysi	is are <b>not</b> synt	hetic ?					
	(A)	Polysulfone		(B)	Polyethersulfone								
	(C)	Cellulose			(D)	Poly	acrylonitrile (l	PAN)					
90.	Rule	of 6 in assessing	g AV fi	istula matı	uration	are al	II EXCEPT :						
	(A)	6 mm in diame		(B)	less than 6 mm below the skin								
	(C)	less than 6 cm i	n leng	th	(D)	bloo	d flow of at le	ast 600 n	ıl/min				
91.	Dial	ysis solution calc	ium le	vels norm	ally rar	nge fro	om :						
	(A)	1.25 to 1.5 mEq	I/L		(B)	2.5 t	to 3.0 mEq/L						
	(C)	3.5 to 4.5 mEq/	'L		(D)	Non	e of the above						
92.	Perit	tonitis in peritone	eal dia	lysis patie	nts is d	efined	l by :						
	(A)	Presence of clou	ady PI	) effluent									
	(B)	100 white blood	d cells,	/mm <sup>3</sup>									
	(C)	At least 50% po	olymoi	phonuclea	ar cells								
	(D)	All of the above	<u>j</u>										
93.	Whi	ch among the fol	lowing	g statemer	nts are i	false r	egarding ultra	filtration	failure ?				
	(A)	A) Net UF is less than 400ml after a 4 hour dwell of 2.25 dextrose dialysis solution											
	(B)	Net UF is less t	han 40	0ml after	a 4 hou	ır dwe	ell of 4.25 dext	rose dial <sup>.</sup>	sis solut	ion			
	(C)	C) Net UF is less than 200ml after a 4 hour dwell of 2.25 dextrose dialysis so											
	(D)	Net UF is less t	han 20	0ml after	a 4 hou	ır dwe	ell of 4.25 dext	rose dial	sis solut	ion			
94.	Bene	efits of regional c	itrate	anticoagul	ation a	re all	EXCEPT :						
	(A)	Reduced neutro	ophil a	ind compl	iment a	activat	tion						
	(B)	Reduced bleedi	ng risł	۰ ۲									
	(C)	Better efficacy of	on circ	uit patenc	cy								
		I I I I I											

(D) Hypocalcemia

95. Potential advantages of slow continuous therapies are all EXCEPT :

- (A) Highly effective in removing fluid
- (B) Deleterious effect on intracranial pressure
- (C) Hemodynamically well tolerated
- (D) Better control of azotemia
- 96. Dialyzer efficiency is best represented by :
  - (A)  $K_o A$  (B) Ability to remove very large molecules
  - (C) High water permeability (D) All of the above

97. Hemodialysis is a therapy of choice for the following drug toxicity except :

- (A) Lithium (B) Salicylate
- (C) Ethylene glycol (D) Amitriptyline
- 98. The ideal blood flow rate for membrane plasma separation :
  - (A) 50 100 ml/min
    (B) 100 150 ml/min
    (C) 150 200 ml/min
    (D) 200 250 ml/min
- 99. Complications during plasmapheresis are all EXCEPT :
  - (A) Hemorrhage (B) Hypocalcemia
  - (C) Hypertension (D) Thrombocytopenia

100. Type A dialyzer reaction is due to all of the following EXCEPT :

- (A) Reaction to ethylene oxide (B) Reuse syndrome
- (C) Heparin (D) Compliment activation

- 0 0 0 -

## SPACE FOR ROUGH WORK

## SPACE FOR ROUGH WORK