45. Give two causes of prerenal acute renal failure.

a. Intravascular volume depletion, haemorrhage, diarrhoea, vomiting, burns.
b. Cardiac failure—MI, valvular damage.
c. Peripheral vasodilatation.
d. Renal vascular abnormalities.

46. Give two causes of intrarenal acute renal failure?

a. Small vessel injury –vasculitis
b. Tubular epithelial injury-acute tubular necrosis
c. Renal interstitial injury-acute pyelonephritis

47. What is glomerulonephritis?

- A type of intrarenal acute renal failure.
- Caused by abnormal immune reaction damaging the glomerulus.
- Secondary to infections by group A beta streptococci.

48. What is tubular necrosis? Give the causes.

- A cause of intrarenal acute renal failure.
- Means destruction of tubular epithelial cells due to ischaemia, poisons, toxins or medications.

49. Name some toxins causing tubular necrosis?

Carbon tetrachloride, heavy metals, ethylene glycol, insecticides, medications such as tetracyclines, cisplatinum.

50. What is end stage renal disease?

Initial insult to kidney causes progressive destruction of kidney function. Any further loss of nephrons makes the patient to be placed on dialysis or kidney transplantation.

51. What is glomerulosclerosis?

- Occlusion of interlobar arteries and afferent arteriole
- No sufficient collateral circulation
- Sclerosis of glomeruli

52. What is pyelonephritis?

- Renal interstitial injury caused by bacterial infection-E.coli.
- Results in renal failure.

75. What are areas constituting thirst centre?

- SFO (sub formical organ)
- OVLT (organum vasculosum of lamina terminalis)

76. What is the threshold for drinking?

When plasma concentration of Na + increases to 2 meq/l above normal(138–146 meq/l),the thirst mechanism is activated,causing a desire to drink water. This is called the threshold for drinking.

77. Mention any two non-excretory functions of the kidney?

1. Regulating arterial pressure
2. Secretion of erythropoietin, calcitriol
3. Gluconeogenesis

78. What is overflow incontinence?

Sensory nerves from bladder cut → micturition reflex cannot occur → person loses bladder control → urine fills to the bladder capacity and overflows into urethra in drops.

79. What is tabetic bladder?

Syphilis → constrictive fibrosis around dorsal nerve roots → atonic bladder results also called as tabetic bladder.

80. Name the variables controlling glomerular hydrostatic pressure.

1. Net filtration pressure
2. Glomerular capillary filtration coefficient

81. What is renal autoregulation?

Kidneys have an effective balancing mechanism for maintaining renal blood flow and GFR over an arterial pressure range of 80–170 mmHg → autoregulation.

82. What is glomerulotubular balance?

An adaptive mechanism in renal tubules → increased tubular reabsorption when GFR increases.

83. Why passively absorbed substances do not have a transport maximum?

Substances that are passively reabsorbed do not have a transport maximum brcause their rate of transport does

56. What are the main effects of Kluver-Bucy syndrome?

Placidity, hypersexuality in male, moderate hyperphagia with indiscriminate eating of all kinds of food (omniphagia).

57. Define neuron.

The structural and functional unit of the nervous system is the nerve cell or neuron. The neuron comprises of a cell body and two types of processes, the dendrites and axon. There are 10^{11} neurons.

58. What are the factors necessary for growth and maintenance of the nerve integrity?

Nerve growth factor, Brain derived growth factor, Neurotrophin 3, Neurotrophin 4, Ciliary neurotrophic factor, leukemia inhibitory factor, Insulin like growth factor.

59. Define synapse.

Synapse is the region of contact between two neurons. At the junction between two neurons, there is only contact but no structural continuity. They are present only in gray matter of CNS and in outlying autonomic ganglia.

60. What are the chemical neurotransmitters in CNS?

Acetyl choline, dopamine, adrenaline, nor-adrenaline, serotonin, GABA, glycine, glutamine, aspartate, histamine, substance P, endorphins, VIP, CCK, angiotensin II, nitric oxide.

61. Define reflex action.

Reflex action is the involuntary response resulting from stimulation of the receptor organ.

62. What are the properties of reflex action?

- Involuntary and does not involve the innervations of consciousness.
- Inborn and not acquired except conditional reflexes.
- Mediated at sub cortical level.
- Present in all members of the species.

63. Enumerate the anatomical basis of reflex arc.

Receptor → Afferent neuron → synapse → inter neurons → synapse → Effector neuron → Effector organ.

108. What are the areas of reward and punishment?

Reward—lateral hypothalamus, septum, tegmentum, dorsal area of pons, median forebrain bundle.

Punishment—posterior hypothalamus, dorsal parts of mid brain.

109. What are the functions of noradrenergic tracts?

- Maintains mood when there is deficiency of nor adrenaline, mood is down and depression develops.
- Deficiency of nor adrenaline – increases hunger and appetite.
- Deficiency of nor adrenergic fibre – increases sleep.

110. What are the lesions of dopaminergic tracts?

Damage of nigrostriatal pathway – parkinsonism.

Excess dopaminergic activity – schizophrenia.

110. What is schizophrenia?

There is faulty perception of senses without any gross visible lesion in the sensory tracts.There is excess activity of meso limbic pathway.

Features

- Hallucination
- Withdrawal from society

111. What is insomnia?

Inability to sleep is called insomnia.

112. What is the function of reticular activating system?

Alertness and wakefulness.

113. What are the functions of thalamus?

- Relay station for all the senses
- Memory
- Maintaining consciousness and alertness along with RAS
- Integrating centre for sleep

114. What is thalamic syndrome?

Blockage of thalamogeniculate branch of posterior cerebral artery damages the posteroventral and