

RENAL AND REPRODUCTION PATHOLOGY

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1. GLOMERULAR DISEASE

1. A 10-year-old female presented with a history of sore throat followed by hematuria and azotemia. What is the most likely organism in this case causing nephritic syndrome?

- a. Staphylococcus aureus
- b. Streptococcus B hemolytic ✓
- c. E-coli
- d. Proteus
- e. Actinobacillus

2. A twelve year old boy presented with hematuria. Urinalysis shows RBCs and RBC casts. The boy also complains of mild hearing impairment and decreased visual acuity. He is most probably suffering from:

- a. IgA nephropathy ✓
- b. Alport syndrome
- c. Focal segmental glomerulosclerosis
- d. Fabry's disease
- e. Thin basement membrane disease

3. A five year old boy with "tea colored urine", oliguria and periorbital edema reports to medical OPD. He had a sore throat two weeks back. The patient is found to be hypertensive. ASO titer and anti DNAase B titer is also elevated. Urine test is positive for blood and RBC casts. The most likely mechanism for this condition is:

- a. Acute bacterial infection of kidneys
- b. Amyloid deposits
- c. ANCA positive vasculitis
- d. Antibody against glomerular basement membrane antigen
- e. Immune complex deposits

4. In minimal change disease of kidney, the principal lesion is in:

- a. Visceral epithelial cells
- b. Parietal epithelial cells
- c. Mesangial cells
- d. Endothelial cells
- e. Both mesangial and endothelial cells

5. A 28 year old man presents with moderate proteinuria and hypertension. Histologic sections of a kidney biopsy reveal the combination of normal appearing glomeruli and occasional glomeruli that have deposits of hyaline material. No increased cellularity or necrosis is noted in the abnormal glomeruli. Additionally, there is cystic dilation of renal tubules, some of which are filled with proteinaceous material. Electron microscopy reveals focal fusion of podocytes and immunofluorescence examination finds granular IgM/C3 deposits. Further workup finds a mutation involving the NPHS2 gene, the product of which is found within the slit diaphragm of the glomerulus. What is the normal protein product of this gene?

- a. Cubilin
- b. Megalin
- c. Nephrin
- d. Podocin
- e. Polycystin

6. A 28 year old man with a history of malaise and hemoptysis presents with the acute onset of renal failure. Laboratory examination reveals increased serum creatinine and urea, but neither antineutrophil cytoplasmic antibodies (ANCA) nor

antinuclear (ANA) antibodies are present. Urinalysis reveals the microscopic presence of red blood cells and red blood cell casts, while a renal biopsy reveals crescents within Bowman space of many glomeruli. Immunofluorescence reveals linear deposits of IgG and C3 along the glomerular basement membrane. Which of the following is the most likely diagnosis?

- a. Alport syndrome
- b. Diabetic glomerulopathy
- c. Goodpasture syndrome
- d. Henoch-Schonlein purpura
- e. Wegener granulomatosis

7. The glomerular filtration barrier is composed of all of the following except:

- a. Fenestrated capillary endothelium
- b. Macula densa
- c. Basement membrane
- d. Podocytes
- e. Mesangial cells

8. Which of the following is most likely to be found in the absence of other findings in subjects with membranous glomerulonephritis:

- a. Rapid onset
- b. RBC casts
- c. Oliguria
- d. Albuminuria
- e. Hypertension

9. A seven years old child presents with edema, hyperlipidemia and proteinuria and hypoalbuminemia. The edema is initially periorbital and then spreads to the rest of the body. The patient is given steroid therapy and the disease goes away. What is the key morphological features of the patient's disease?

- a. Fusion of the foot processes (Effacement)
- b. Destruction of GBM
- c. Destruction of glomerulus
- d. Hemosiderin laden macrophages in the kidney
- e. Sub endothelial immune deposits

10. A patient presents with hematuria, proteinuria and edema. C3 level are low and examination of the basement membrane reveals thickening and tram-tracking appearance. He is diagnosed with MPGN-1.

Electron dense deposition is seen most commonly in:

- a. Sub-endothelial area
- b. GBM
- c. Mesangium
- d. The loop of henle
- e. Sub-epithelial

11. Select the option in the list mentioned below which is a cause of nephrotic syndrome in children as well as an important cause of kidney failure in adults. On biopsy, only some of the glomeruli are involved or only part of an entire glomerulus is involved and there is scarring of the glomerulus:

- a. Cryoglobulinemia
- b. Focal segmental glomerulosclerosis
- c. Good pasture syndrome
- d. MPGN
- e. RPGN

12. A hemorrhagic lung disorder, resulting in coughing up of blood, associated with glomerulonephritis is commonly seen in:

- a. SLE
- b. Post-streptococcal GN
- c. Polyarteritis
- d. Good pasture syndrome
- e. DM

13. IgA nephropathy must commonly presents as:

- a. ARF
- b. Necrotizing papillitis
- c. Recurrent hematuria
- d. Acute nephrotic syndrome
- e. Nephritic syndrome

14. All of the following are causes of nephrotic syndrome except:

- a. Minimal change disease
- b. Focal segmental glomerulosclerosis
- c. Membranous glomerulonephritis
- d. Diabetes
- e. Post-streptococcal glomerulonephritis

1.B	2.B	3.E	4.A	5.D
6.C	7.B	8.D	9.	10.A
11.B	12.D	13.E	14.E	

15. A 4 year old child present with nephrotic syndrome. No light microscopic changes seen in a renal biopsy. Which of the following IF findings would most likely be present:

- a. Absence of C3 and Immunoglobulin deposits
- b. Continuous granular C3 deposition along capillary wall
- c. Granular IgG/C3 deposits along GBM
- d. Mesangial IgA deposits
- e. Linear IgG deposition along GBM

16. Granular deposits of IgG, IgM and C3 in mesangium and along basement membrane in immunofluorescence occur in:

- a. Acute post-streptococcal glomerulonephritis
- b. Crescentic glomerulonephritis
- c. Nephrotic syndrome
- d. Focal segmental glomerulonephritis
- e. Membranous glomerulonephritis

17. Rapidly progressive glomerulonephritis occurs in which of the following:

- a. Post infectious GN
- b. SLE
- c. Good pasture syndrome
- d. Polyarteritis nodosa
- e. All of them

18. Urinalysis results include proteinuria, many red blood cells and red blood cell cast and 1-2 white blood cells per high power field. Which of the following diseases best fits with these findings?

- a. Acute cystitis
- b. Acute pyelonephritis
- c. Chronic pyelonephritis
- d. Acute post-streptococcal glomerulonephritis
- e. Minimal change disease

19. The majority of patients with acute post-streptococcal glomerulonephritis:

- a. Die from congestive heart failure in a few weeks
- b. Die from renal failure in a few weeks
- c. Pass through a latent period but eventually develop chronic glomerulonephritis

- d. Progress through subacute phase to chronic glomerulonephritis
- e. Recover completely

20. A histopathologic glomerular lesion which, when present, strongly suggests diabetes mellitus is:

- a. Absence of foot processes as the only EM finding
- b. Extensive crescent formation
- c. Linear IgG and C3 on immunofluorescence
- d. Splitting of basement membrane
- e. Nodular glomerulosclerosis

21. Membranous glomerulopathy and post-streptococcal glomerulonephritis are similar in that they both:

- a. Are self-limiting and transient renal diseases
- b. Are commonly associated with nephrotic syndrome
- c. Are most commonly seen in children
- d. Have glomerular immune complex deposits
- e. Occur most frequently following an infectious disease

22. Nephrotic syndrome is characterized by:

- a. Hematuria, proteinuria, hypertension
- b. Pyuria, oliguria, hematuria
- c. Hematuria, azotemia, hypertension
- d. Proteinuria, edema, hyperlipidemia
- e. Bacteriuria, azotemia, hypertension

23. "Double contour" or "Tram track appearance" is a characteristic feature of:

- a. IgA nephropathy
- b. Minimal change disease
- c. Membranoproliferative glomerulonephritis
- d. Focal segmental glomerulosclerosis
- e. HIV associated nephropathy

15.A	16.A	17.E	18.D	19.E
20.E	21.D	22.D	23.C	---

24. Deposition of IgG on or in the glomerular basement membrane can be seen in all of the following except:

- a. Acute post-streptococcal glomerulonephritis
- b. Minimal change glomerulonephritis
- c. Lupus erythematosus glomerulonephritis
- d. Good pasture syndrome
- e. Membranous nephropathy

25. All of the following are true of nephrotic syndrome except:

- a. Heavy proteinuria
- b. Hypoalbuminemia
- c. Generalized edema
- d. Hypertension at the start
- e. Hyperlipidemia and hypercholesterolemia

26. A 50 years old male develop acute renal failure with dark urine one week after flu like illness. Renal biopsy is likely to reveal:

- a. Renal infarction
- b. Crescentic glomerulonephritis
- c. Myeloma kidney
- d. Amyloidosis
- e. Acute tubular necrosis

27. All of the following are true of membranoproliferative glomerulonephritis (MPGN) EXCEPT:

- a. The prognosis of MPGN is generally poor
- b. MPGN type I is far more common than MPGN type II
- c. Micro organisms are usually isolated from the affected glomeruli
- d. Both types of MPGN show proliferation of mesangial and endothelial cells
- e. Type I MPGN has striking tram track appearance best seen with silver stain

28. The nephrotic syndrome is characterized by:

- a. Glycosuria and hyperalbuminemia
- b. Massive uricemia
- c. Proteinuria, edema and hyperlipidemia
- d. Hyperlipidemia and edema
- e. Hypolipidemia and hypertension

29. Normal reference range for creatinine clearance is:

- a. 50-80 ml/min
- b. 80-120 ml/min
- c. 140-180 ml/min
- d. 180-230 ml/min
- e. 240-280 ml/min

30. Urinalysis results include proteinuria, many red blood cells and red blood cell casts, and 1-2 white blood cells per high power field. Which of the following disease best fits with these findings?

- a. Acute cystitis
- b. Acute pyelonephritis
- c. Chronic pyelonephritis
- d. Acute post streptococcal glomerulonephritis
- e. Minimal change disease

31. A 7 years old child complains of swelling of ankle but no marked constitutional symptoms. Physical examination reveals periorbital swelling and generalized edema. His BP is 135/80 mm of Hg. Urine dipstick is positive for protein but negative for blood and glucose. 24 hours urine collection shows proteinuria of 5 gms/day. What is the most likely cause of the given scenario?

- a. Membranous glomerulonephritis
- b. Berger's disease
- c. Diabetic nephropathy
- d. Minimal change disease
- e. Membranoproliferative glomerulonephritis

32. The features of nephritic syndrome include all of the following except:

- a. Hematuria
- b. Oliguria
- c. Azotemia
- d. Lipid casts
- e. Proteinuria less than 1.0g/dag

24.B	25.D	26.B	27.C	28.C
29.B	30.B	31.D	32.D	--

33. Causes of secondary hypertension include all of the following except:

- a. A renal artery stenosis
- b. Adrenal cortical carcinoma
- c. Chronic pyelonephritis
- d. Minimal change disease
- e. Renal artery fibromuscular dysplasia

34. A patient with hemoptysis and renal failure reveals crescentic proliferative glomerulonephritis and linear deposits of IgG and C3 on biopsy. The diagnosis is:

- a. Acute post-infectious glomerulonephritis
- b. Membranous nephropathy
- c. Good pasture's syndrome
- d. Minimal change disease
- e. Acute pyelonephritis

35. Histologically RPGN is characterized by the presence of:

- a. Red cell casts
- b. Crescents
- c. Sub endothelial deposits
- d. Thickening of capillary wall
- e. Sub epithelial deposits

36. Glomerulonephritis developing a few days after upper respiratory infection is most likely to be:

- a. Henoch schlein purpura
- b. IgA nephropathy
- c. Minimal change disease
- d. Membranoproliferative glomerulonephritis

37. In minimal change disease or lipoid nephrosis the pathology is:

- a. Crescent formation
- b. Mesangial sclerosis
- c. Diffuse loss of foot processes
- d. Thickening of glomerular basement membrane (GBM)
- e. None

38. A 13 year old boy present with edema, hyperlipidemia, massive proteinuria greater than 3.5g/day. Urine R/E shows fatty casts. The patient is diagnosed as membranous nephropathy. What is the characteristic histopathological finding?

- a. Formation of crescents
- b. Effacement of foot processes
- c. Focal segmental glomerulosclerosis
- d. Kimmelstiel Wilson lesion
- e. Spike and dome appearance with sub epithelial deposits

33.C	34.C	35.B	36.B	37.C	38.
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2. DISEASES AFFECTING TUBULES AND INTERSTITIUM

1. A woman with a long history of migraine headaches present to OPD with anemia, epigastric pain and hypertension. She also complains of hematuria. Renal biopsy shows Papillary Necrosis and cortical tubulointerstitial nephritis. The most probable cause is:

- a. Analgesic nephropathy
- b. Urate nephropathy
- c. Chronic pyelonephritis
- d. Acute tubular necrosis
- e. Nephrolithiasis

2. "Thyroidization" is a characteristic feature of:

- a. Acute pyelonephritis
- b. Acute tubular necrosis
- c. Tubulointerstitial nephritis
- d. Chronic pyelonephritis
- e. Nephrotoxic acute tubular necrosis

3. Flea bitten appearance is characteristic of:

- a. Ischemic ATN
- b. Benign nephrosclerosis
- c. Nephrotoxic ATN
- d. Malignant nephrosclerosis
- e. Minimal change disease

4. The most common aetiological agent of acute pyelonephritis is:

- a. Streptococcus fecalis
- b. Klebsiella pneumoniae
- c. Escherichia coli
- d. Pseudomonas aeruginosa
- e. Mycobacterium tuberculosis

5. Two weeks after taking a course of sulfonamide drugs, patient presents to you with complains of fever, rash, blood in urine. Serum creatinine and blood urea nitrogen (BUN) are elevated. Urine R/E shows pyuria mostly eosinophils. The most likely diagnosis is:

- a. Acute pyelonephritis
- b. Renal cell carcinoma
- c. Drug induced tubule interstitial nephritis
- d. Acute tubular necrosis
- e. Cystitis

6. A 30 year old woman on second post-partum day with a history of post-partum hemorrhage present to OPD with oliguria, edema and raised serum creatinine and BUN. Urine R/E shows granular muddy, brown casts. The most probable diagnosis is:

- a. Acute tubular necrosis
- b. Drug induced interstitial nephritis
- c. Pyelonephritis
- d. Transitional cell carcinoma
- e. Hydronephrosis

1.A	2.D	3.D	4.C	5.C	6.E
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3. CYSTIC DISEASE OF KIDNEY

1. Genetic mutations responsible for adult polycystic kidney disease:

- a. MSH and MLH1
- b. WT1 and WT2
- c. PKD1 and PKD2
- d. Rb
- e. T(9,22) (q34;q11)

2. The cysts in autosomal recessive polycystic kidney disease arise from:

- a. Glomerulus
- b. Proximal convoluted tubule
- c. Distal convoluted tubule
- d. Collecting tubule
- e. Renal sinus

3. In adult polycystic disease, each of the following statements is true except:

- a. The disease is familial
- b. The renal involvement is occasionally unilateral
- c. The disease is generally asymptomatic until early adult or middle life
- d. Hematuria, hypertension and palpable abdominal masses are frequent clinical findings in
- e. Autosomal dominant inheritance

4. The most common autosomal dominant mutation in polycystic kidney disease involves which of the following gene?

- a. PKD1
- b. PKHD1
- c. WT1
- d. Von Hippel Lindu gene
- e. MET proto oncogene

1.C	2.B	3.B	4.A
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4. URINARY OUTFLOW OBSTRUCTION AND RENAL NEOPLASMS

1. A five year old child has pain in his abdomen for last two months. On physical examination there is a palpable mass on his posterior abdomen. CT scan shows a mass in his left kidney. Nephrotomy was performed after confirmation by the tru-cut biopsy of the mass. Which of the following is the most likely diagnosis?

- a. Renal cell carcinoma
- b. Urothelial carcinoma
- c. Wilm's tumor
- d. Angiomyolipoma
- e. Rhabdomyosarcoma

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2. Red cell casts in the urine would be compatible with:

- a. A ureteral calculus
- b. A transitional cell carcinoma of the renal pelvis
- c. Anti-glomerular basement membrane antibody induced renal lesion
- d. A foreign body in the urinary bladder
- e. Acute tubular necrosis

3. All of the following are true of renal stones EXCEPT:

- a. About 80% of renal stones are composed of calcium oxalate or calcium oxalate mixed with calcium phosphate
- b. Urinary tract infection due to protus vulgaris predisposes to urolithiasis
- c. Leukemia may lead to formation of uric acid stones due to rapid cell turn over
- d. Lack of Tomm-Horsfall protein in urine favors stone formation
- e. Hypercalcemia may lead to renal stones

4. The most common site of formation of stone in urinary tract is:

- a. Kidney
- b. Ureter
- c. Urinary bladder
- d. Urethra
- e. None

5. A 2 year old boy with visible abdominal distension is found to have an enormous left sided flank mass apparently arising from, but dwarfing the left kidney. The most likely diagnosis is:

- a. Angiomyolipoma
- b. Polycystic kidney
- c. Renal cell carcinoma
- d. Transitional cell carcinoma
- e. Wilms tumor

6. In minimal change disease or lipoid nephrosis the pathology is:

- a. Crescent formation
- b. Mesangial sclerosis
- c. Diffuse loss of foot processes

d. Thickening of glomerular basement membrane (GBM) e. None

1.C	2.C	3.D	4.A	5.E	6.C
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5. Male Reproduction Pathology

1. Which of the following neoplasm is derived from all the three germ layers?

- a. Carcinoma
- b. Teratoma
- c. Sarcoma
- d. Leiomyoma
- e. Fibroadenoma

2. Which of the following neoplasm is characterized by Schiller duval bodies?

- a. Serous carcinoma
- b. Yolk sac tumor
- c. Granulosa cell tumor
- d. Dysgerminoma
- e. Mucinous carcinoma

3. Hyperplastic growth that characterizes benign prostatic hyperplasia occurs in which of the following anatomical zones of the prostate?

- a. Central zone
- b. Peripheral zone
- c. Transitional zone
- d. Posterior zone
- e. Anterior zone

4. The most common malignant tumor of testis is:

- a. Embryonal carcinoma
- b. Choriocarcinoma
- c. Seminoma
- d. Transitional cell carcinoma
- e. Teratoma with malignant transformation

5. In urinary bladder carcinoma, invasion of 5 propria shows which of the following stages according to TNM classification?

- a. T1
- b. T2
- c. T3
- d. T4
- e. T5

6. Carcinoma of prostate spreads through hematogenous route, chiefly to:

- a. Bones(axial skeleton)
- b. Kidneys
- c. Lungs
- d. Obturator lymph node
- e. Para-aortic lymph node

7. Most common testicular tumor in infants and children up to 3 years of age is:

- a. Choriocarcinoma
- b. Embryonal carcinoma
- c. Spermatocytic seminoma
- d. Teratoma
- e. Yolk sac tumor

8. Biopsy of a malignant neoplasm is the urinary bladder having Schistosoma haematobium in its plexuses will most likely reveal:

- a. Adenocarcinoma
- b. Transitional cell carcinoma
- c. Squamous cell carcinoma
- d. Adenosquamous carcinoma
- e. Leiomyosarcoma

9. Which of the following is the most likely radiosensitive?

- a. Embryonal carcinoma
- b. Yolk sac tumor
- c. Teratoma
- d. Seminoma
- e. Choriocarcinoma

10. In a patient with mixed germ cell tumor of testis, which serum markers are best used to monitor response to chemotherapy?

- a. Alpha fetoprotein and human chorionic gonadotropin
- b. Ca 125
- c. Ca 19-9
- d. Carcinoembryonic antigen and alpha fetoprotein
- e. Lactate dehydrogenase and carcinoembryonic antigen

11. A 5 year old is brought to the pediatrician for a physical examination prior to beginning of school. On examination, the boy has only one palpable testis in the scrotum. Further examination reveals a palpable mass in the left inguinal region. This condition is referred to as:

- a. Cryptorchidism
- b. Hydrocele
- c. Orchitis
- d. Torsion of the spermatic cord
- e. Varicocele

12. There is proliferation in which element in BPH:

- a. Glandular
- b. Muscular
- c. Fibrous
- d. All of the above
- e. None

13. Which of the following is the cause of post renal azotemia?

- a. BPH
- b. Renal artery stenosis
- c. Shock
- d. RPGN
- e. Hemolytic anemia

14. Nodular hyperplasia of prostate originates in:

- a. Transitional zone
- b. Central zone
- c. Peripheral zone
- d. Periurethral zone
- e. Capsule of prostate

15. Alpha fetoprotein level is increased in which of the following tumor?

- a. Choriocarcinoma
- b. Yolk sac tumor
- c. Theca cell tumor
- d. Granulosa cell tumor
- e. Brenner tumor

1.B	2.B	3.C	4.C	5.B
6.A	7.E	8.C	9.C	10.A
11.A	12.D	13.A	14.A	15.B

6. Breast

1. A 37 year old female patient is diagnosed to have "Invasive ductal carcinoma" of the right breast. Her mother and maternal aunt have had breast cancer below 40 years of age. What genetic mutation is she likely to carry?

- a. BRCA 1 and BRCA 2
- b. C-Myc
- c. INK4A
- d. K-Ras
- e. P53

2. Which of the following lesions usually presents as a discrete, freely mobile nodule in breast?

- a. Sclerosing adenosis
- b. Fibrocystic disease
- c. Ductal carcinoma
- d. Fibroadenoma
- e. Plasma cell mastitis

3. Bleeding from nipple in a 45 years old woman, without a palpable breast mass should suggest:

- a. Fibroadenoma
- b. Sclerosing adenosis
- c. Fat necrosis
- d. Intraductal papilloma
- e. Chronic cystic mastitis

4. Which one of the following lesion of breast is precancerous?

- a. Galactocele
- b. Adenoma nipple
- c. Atypical hyperplasia
- d. Fibroadenoma
- e. Breast abscess

5. The most common histological variant of breast cancer is:

- a. Colloid carcinoma
- b. Pagets disease
- c. Lobular carcinoma
- d. Medullary carcinoma
- e. Invasive ductal carcinoma

6. Most important risk factor in female carcinoma of breast is:

- a. Gender
- b. Age
- c. Estrogen exposure
- d. Radiation exposure
- e. Breast feeding

7. Which of the following is a good prognostic factor in breast cancer?

- a. Grade III tumor
- b. Estrogen receptor positivity
- c. HER-2 receptors over expression
- d. Lymph node involvement
- e. Mutation in BRCA-2 gene

8. Which of the following statements is not true about fibroadenoma of breast?

- a. It is common in old age
- b. It is frequently bilateral
- c. It usually regresses after menopause
- d. Its epithelium is hormonally responsive
- e. It is the most common benign tumor of female breast

9. The most common breast neoplasm (benign or malignant) in young females (age 20-35) is:

- a. Duct papilloma
- b. Adenocarcinoma
- c. Fibroadenoma
- d. Sarcoma
- e. None

10. Of the histological subtypes of breast carcinoma, which metastasize most frequently to peritoneum, retro peritoneum and leptomeninges?

- a. Invasive ductal carcinoma
- b. Lobular carcinoma
- c. Mucinous carcinoma
- d. Medullary carcinoma
- e. Metaplastic carcinoma

11. Which lesion is more prone to develop in carcinoma of breast?

- a. Adenoma of nipple
- b. Mammary duct ectasia
- c. Epithelial hyperplasia type fibrocystic disease
- d. Fat necrosis
- e. Granulomatous mastitis

12. The most common carcinoma of breast is:

- a. Mucinous carcinoma
- b. Infiltrating ductal carcinoma
- c. Medullary carcinoma
- d. Metastasis from the underlying lung tissue
- e. None of the above

1.A	2.D	3.D	4.C	5.E	6.C
7.B	8.A	9.C	10.B	11.C	12.B

7. Female Genital System

1. All of the following are risk factors for endometrial carcinoma except:

- a. Obesity
- b. Diabetes
- c. Hypertension
- d. Infertility
- e. HSV infection

2. Which of the following endometrial lesions is associated with the highest risk of developing endometrial carcinoma?

- a. Chronic endometritis
- b. Complex hyperplasia with atypia
- c. Complex hyperplasia without atypia
- d. Simple hyperplasia
- e. Squamous metaplasia

3. A 37 years old woman complains to her gynecologist of discomfort during intercourse and placement of a tampon. Physical examination demonstrates flocculent swelling below the skin of the posterolateral part of one labium majora. Which of the following is the most likely diagnosis?

- a. Bartholin's gland cyst
- b. Condylomata acuminatum

- c. Lichen sclerosis
- d. Vestibular adenitis
- e. Vulvar squamous hyperplasia

4. Pap is a screening test for which of the following?

- a. Breast carcinoma
- b. Cervical cancer
- c. Ovarian cancer
- d. Vulvar cancer
- e. Tumors involving the nipple

5. Metastatic signet ring cell carcinoma in ovaries is called:

- a. Krukenberg tumor
- b. Dysgerminoma
- c. Brenner tumor
- d. Teratoma
- e. Yolk sac tumor

6. A 47-year old woman has a cystic mass in her left ovary along with ascitis. A fine needle aspirate of the mass on cytologic examination reveals clusters of malignant epithelial cells surrounding psammoma bodies. Which of the following neoplasm she most likely has?

- a. Squamous cell carcinoma
- b. Endometrioid carcinoma
- c. Serous cystadenocarcinoma
- d. Malignant mesothelioma
- e. Mature cystic teratoma

7. The Stein-Leventhal syndrome is characterized by each of the following except:

- a. Many corpora lutea present in the ovaries
- b. Obesity
- c. Hirsutism
- d. Secondary infertility
- e. Menstrual irregularity

1.E	2.B	3.A	4.B
5.A	6.C	7.A	[[[

8. A 29-year old woman presents with severe pain during menstruation (dysmenorrhea). During workup, an endometrial biopsy is obtained. The pathology report from this specimen makes the diagnosis of chronic endometritis. Based on this pathology report, which of the following was present in the biopsy sample of the endometrium?

- a. Neutrophils
- b. Lymphocytes
- c. Lymphoid follicles
- d. Plasma cells
- e. Decidualized stromal cells

9. Histologic examination of a cystic mass removed from the left ovary of a 25 years old female shows a cystic wall lined by mature stratified squamous epithelium with skin appendages. Mature gut and bronchial epithelium, cartilage and thyroid tissue are also present. Which type of malignant transformation is this tumor most likely to undergo?

- a. Adenocarcinoma
- b. Chondrosarcoma
- c. Immature teratoma
- d. Squamous cell carcinoma
- e. Mature teratoma

10. Prolonged unopposed estrogen stimulation in an adult female increases the risk of development of endometrial hyperplasia followed by carcinoma. What is the most likely histologic appearance of this endometrial carcinoma?

- a. Adenocarcinoma
- b. Clear cell carcinoma
- c. Small cell carcinoma
- d. Squamous cell carcinoma
- e. Transitional cell carcinoma

11. About endometriosis all of the following statements are correct EXCEPT:

- a. Seen in fallopian tubes
- b. Foci are brown or blue in color
- c. Most common in ovaries

- d. Common in postmenopausal women
- e. May bleed during menstruation

12. A 45 years old female is diagnosed as having squamous cell carcinoma of cervix with past history of multiple sexual partners. Which of the following DNA virus is most likely to be detected in the tumor biopsy material?

- a. HPV 16
- b. HPV 6
- c. EBV
- d. HSV type 1
- e. HSV type 2

13. A female baby born with grapes like structure coming out from vagina is having?

- a. Polyp
- b. Vaginal prolapse
- c. Embryonal rhabdomyosarcoma
- d. Strawberry cervix
- e. Adenocarcinoma

14. The serous cystadenoma of ovary, histologically will resemble to:

- a. Endometrium
- b. Fallopian tube lining
- c. Endocervical lining
- d. Vaginal squamous epithelium
- e. Urothelium

15. Most common ovarian carcinoma is:

- a. Serous cyst adenocarcinoma
- b. Serous cyst adenoma
- c. Mucinous CA
- d. Malignant teratoma
- e. Clear cell CA

16. Ultrasound examination of an 8 year old girl with precocious puberty reveals a 5 cm firm, smooth right ovarian mass. She most likely has a:

- a. Dermoid cyst of the ovary
- b. Cystadenocarcinoma of the ovary

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- c. Granulosa cell tumor
- d. Fibroma of ovary
- e. Teratoma of the ovary

17. The most common site of endometriosis is:

- a. Fallopian tube
- b. Ovary
- c. Broad ligament
- d. Appendix
- e. Cervix

18. Anovulatory cycle is characterized by:

- a. Excessive and prolonged estrogen stimulation
- b. Prolonged progesterone stimulation
- c. Decreased estrogen secretion
- d. Endometrial atrophy
- e. Secretory endometrium

19. Which one is not a germ cell tumor?

- a. Dermoid cyst
- b. Embryonal carcinoma
- c. Dysgerminoma
- d. Granulosa cell tumor
- e. Yolk sac tumor

20. Which one is not a surface epithelial tumor?

- a. Serous cystadenoma
- b. Mucinous cystadenoma
- c. Dysgerminoma
- d. Endometrioid tumor
- e. Clear cell carcinoma

21. About carcinoma of endometrium all are correct except:

- a. Causative agent is estrogen
- b. Occurs in older women
- c. Preceded by endometrial hyperplasia
- d. Maybe associated with ovarian tumors
- e. Progesterone is causative agent

22. About stage 2 carcinoma of cervix which one is correct?

- a. Carcinoma limited to cervix

- b. Growth reaches pelvic wall
- c. Lower third of vagina is involved
- d. Growth extends beyond cervix
- e. Bladder is involved

23. A patient on oral contraceptives. Estrogen will have increased risk of all except:

- a. Breast carcinoma
- b. Endometrial hyperplasia
- c. Endometrial carcinoma
- d. Vaginal carcinoma
- e. Thromboembolism

24. Which one of the following is germ cell tumor of ovary?

- a. Endometrioid tumor
- b. Fibroma
- c. Dysgerminoma
- d. Granulosa cell tumor
- e. Brenner tumor

25. Which of the following is a most common ovarian malignant tumor?

- a. Serous cyst adenocarcinoma
- b. Serous cyst adenoma
- c. Mucinous carcinoma
- d. Malignant teratoma
- e. Clear cell carcinoma

26. The counter part of seminoma in the ovary is:

- a. Brunner tumor
- b. Cystadenocarcinoma
- c. Dysgerminoma
- d. Choriocarcinoma
- e. Cystic teratoma

8.D	9.E	10.A	11.D	12.A
13.C	14.B	15.A	16.C	17.B
18.	19.D	20.C	21.E	22.D
23.D	24.C	25.A	26.C	

27. A pap smear of a 65 years old nulliparous female reveals cells that are consistent with squamous cell carcinoma. Which one of the following condition most likely contributed to this malignancy?

- a. Endometrial hyperplasia
- b. Chronic endometritis
- c. Adenomyosis
- d. Use of the contraceptive pills
- e. Human papilloma virus infection

28. The counter part of seminoma in the ovary is:

- a. Brunner tumor
- b. Cystadenocarcinoma
- c. Dysgerminoma
- d. Choriocarcinoma
- e. Cystic teratoma

29. A 20 years old woman noticed multiple watery lesions on the perineum. A scarping from one of the lesion produces cells which are cytologically consistent with koilocytotic atypia. Choose the infection agent likely to produce finding above:

- a. Trichomonas vaginalis
- b. Human papilloma virus
- c. Neisseria gonorrhoea
- d. Chlamydia trachomatis
- e. Ebstein bar virus

30. Squamous cell carcinoma of cervix is associated with which of the following?

- a. Epstein bar virus
- b. Hepatitis virus
- c. Human papilloma virus
- d. Human T cells lymphotropic virus
- e. Human immunodeficiency virus

31. A 60 years old female with an abdominal mass underwent laparotomy that revealed bilateral ovarian masses. Bilateral oophorectomy was performed and biopsy of the mass revealed Krukenberg tumor. It indicates which of the following?

- a. Endometriosis
- b. Adenomyosis
- c. Metastatic carcinoma
- d. Ectopic pregnancy
- e. Hyperestrogenic state

32. Which of the following viruses is highly associated with cervical cancer?

- a. CMV
- b. EBV
- c. HTLV type I
- d. HPV 16 and 18
- e. HPV 6 and 11

33. A 30 years old female experiences cyclic abdominal pain that occur during menstruation. She is married for the last 5 years but not conceived yet. Physical examination shows no abnormality. Laparoscopic examination shows numerous hemorrhage 0.2-0.5 cm lesions over the peritoneal surface of the ovaries and uterus. Of the following lesions, which one is most likely?

- a. Brenner tumor
- b. Cystadenocarcinoma
- c. Endometriosis
- d. Fibroma
- e. Mature cystic teratoma

34. Histological examination of a cystic mass, removed from the left kidney of a 25 years old female shows a cystic wall, lined by mature stratified squamous epithelium with skin appendages. Mature gut and bronchial epithelium, cartilage and thyroid tissue are also present. Which type of malignant transformation is this tumor most likely to undergo?

- a. Adenocarcinoma
- b. Chondrosarcoma
- c. Immature teratoma
- d. Squamous cell carcinoma
- e. Thyroid follicular carcinoma

35. A monodermal teratoma which is called struma ovarii is composed up of which one of the following structures?

- a. Bone
- b. Cartilage
- c. Thyroid tissue
- d. Skin and appendages
- e. Skeletal muscle

36. The classic appearance of fibroid is:

- a. Whorled pattern of smooth muscle
- b. Calcification at the center
- c. Red degeneration of big tumors
- d. Extension into blood vessels
- e. All of the above

37. Symptoms of endometriosis include:

- a. Severe dysmenorrhea
- b. Dyspareunia
- c. Pelvic pain
- d. Infertility
- e. All of the above

38. Strawberry cervix is seen in infection due to:

- a. Candida
- b. Chlamydia
- c. Trichomonas
- d. Mycoplasma
- e. None

39. A 23 year old woman consults an obstetrician because of the onset of vaginal bleeding in what she considers to be her 5th month of pregnancy; however examination reveals the uterus to be enlarged to the size of a 7 month pregnancy. Intravaginal ultrasound fails to detect a fetal heartbeat and instead shows a snowstorm pattern. Human chorionic gonadotropin is markedly elevated. These findings are strongly suggestive of:

- a. Preeclampsia
- b. Eclampsia
- c. Placenta accreta
- d. Ectopic pregnancy
- e. Hydatidiform mole

27.E	28.C	29.B	30.C	31.C
32.D	33.C	34.C	35.C	36.A
37.E	38.C	39.E		

HINTS AND EXPLANATION

1. GLOMERULAR PATHOLOGY

1. Post streptococcal GN is an immune complex disease in which causes specific antigen implicated in pathogenesis include (Spe B), (GAPDH) both have affinity for glomerular proteins and plasmin as cause Nephritic Syndrome.
2. Alport syndrome patients have X-linked Disease as a result of mutation of the gene on the X-chromosome encoding alpha-5 Chains of type-IV collagen IV Collagen is crucial for normal functions of lens, cochlea and glomerulus.
3. Post streptococcal GN is an immune complex disease. Serum Anti Streptolysin O antibody titers are elevated in post streptococcal Cases
4. In minimum change disease the only obvious glomerular abnormality is the diffuse effacement if foot processes of podocytes Visceral Epithelial Cell. Usually refers superficially to podocytes w/c are specialized epithelial cells that reside in the visceral layer of capsule.
5. Medullary Disease cysts. Nephrolithiasis Nephrothiasis (Juvenile, Infantile, adolescent life, adult life)
- At least 9 genes (NPHS1 --> NPH9) encodes proteins (Nephrocystin) w/c are components of epithelial cilia.
6. Rapidly progressive GN is characterized by the presence of crescents. Anti GBM antibody mediated crescentic GN (Good Pasture) is characterized by linear deposits of Ig G and C3 in the GBM also binds to pulmonary alveolar Capillary basement membrane.
8. Membrane nephropathy is characterized by subepithelial IG Containing deposits along GBM it is characterized by non selective proteinuria usually fails to respond to corticosteroids therapy.

- MPGN -I and II
- I (It is characterized by discrete subendothelial deposits
- II (Dense Deposits Disease
- 10. Anti GBM antibody (IgG ,C3) also binds to pulmonary aveolas
- 11. FCGS are characterized by sclerosis of some (but not at all) glomeruli that involves only a part of each affected glomerulus
- 14. Nephritic Syndrome
- Minimal Disease:
- Membranous Nephronopathy.
- FCGS
- MPGN
- DM (It cause nodular Glomerulosclerosis in w/c patient presents e- Nephritic Syndrome.
- 15. Child with Nephrotic Syndrome suffering in minimal change disease in w/c there is absence of C3 and IG Deposits only effacement of foot processes of podocytes.
- 21. Although both are immune complex mediated diseases although membranous nephropathy is nephrotic syndrome and post. Strep GN is Nephritic Syndrome.
- Nephritic Syndrome
- Generalized edema
- Proteinuria > 3.5 g
- Hyperlipidemia/Lipidemia
- Hypoalbuminemia < 3g/dl
- 23. LM shows proliferation of mesangial and endothelial cells as well as infiltrating leucocytes. The GBM is thickened and glomerular capillary wall after shows a double contour or tram track.
- 26. Flue like symptoms with dark urine shows post streptococcal GN which is likely cause for rapidly. Progressive GN also called Cresentic GN.
- 35. Crescents are formed both by proliferation of epithelial cells and by migration of monocytes/macrophages into Bowman's Space. Cellular proliferation also is seen within capillary loops or in the mesangial areas in cases with immune

- complex mediated pathogenesis Such as post infections GN IgA Nephropathy Lupus Nephritis.
- S/S. C --> calcium Elevated
- R renal Failure
- A Anemia
- B Bone Lesions
- Dx" a doctor Request protein electrophoresis of blood and urine which cause might show the presence of a para protein. (Monoclonal or M Protein)
36. Genetically Susceptible Individuals respiratory or GI exposure to microbial or other antigens e.g Viruses, bacteria, food proteins may lead to increased IgA synthesis, Some of Which is abnormally glycosylated (Galactose deficient IgA1 Ig) and Deposition of IgA and IgA containing immune complexes in mesangium where they activate the alternative complement pathway and initiate glomerular injury.
37. Minimal change disease a relatively benign disorders is most frequent cause of Nephrotic Syndrome in children (1-7 Years) and is characterized by glomeruli that have diffuse effacement if foot processes of podocytes (on E.M)
38. The main histologic feature of membranous Nephronopathy is diffuse thickening of capillary wall on routine H & E stains. E.M reveals that this apparent thickening is caused in part by subepithelial deposits which can nestle against the GBM and are separated from each other by small spike like protrusions of GBM matrix that form in rxn to the Deposits (spike like and some pattern)

2. Disease affecting Tubules and Interstitium

1. Pupillary Necrosis
 - DM
 - Analgesics Nephropathy
 - Urinary Tract Obstruction
 - Sickle Cell Anemia
2. Chronic Pyelonephritis
 - Uneven Scaring
 - Caliectasis
 - Uneven Scaring
 - HTN

Nocturia, Polyuria, Hyposthenuria

3. Small pinpoint petechial hemorrhage may appear on cortical surface from the rupture of arteriole or glomerular capillaries giving the kidney a peculiar, flea bitten appearance. Damage to small vessels is manifested as fibrinoid Necrosis.
 4. Vesicouretral Reflux (VUR) ,Kidney stones, Urinary Tract Catheterization, Urethral Stents, Nephrostomy, Pregnancy, Neurogenic bladder, BPH, DM, immunocompromised Status.
 5. 2 weeks Sulphonamide Tix in complain of fever, rash, hematuria, leucocyturia, Serum creat and BUN elevated shows drugs induced interstitial nephritis (is an IgE or T cell mediated Immune Reaction to a drug it is characterized by interstitial Inflammation, often with abundant eosinophil and edema.
 6. An Ischemic ATI often The result of a period of inadequate blood flow to all over or some peripheral organs such as the kidney, sometimes in the setting of marked hypotension and shock due to postpartum hemorrhage.
- S/S uremia, acidosis, Fluid Overload oliguria.
- Note: A Sticking Additional findings so the presence of proteinaceous cast on the distal and collecting ducts Consists of Tamm. Horsfall Protein along with Hemoglobin and Plasma Protein.

3. Cystic Disease of Kidney.

1. PKD1 and PKD2 are 2 genes located on chromosome 16 and 4 respectively. These genes encode proteins (Polycystin 1 and Polycystin 2) and are localized to cilia. Mutations in these genes results in autosomal dominant adult polycystic kidney disease.

4. Urinary Outflow Obstruction and Renal Neoplasms

1. Wilm's Tumor Also known as nephroblastoma is a type of kidney cancer that typically occurs in children.
 - S/S -- Painless, Palpable abdomen, mass
 - Loss of appetite
 - Abdomen Pain , Fever
 - Nausea , Vomiting
 - Blood In Urine
 - Increase in Blood Pressure

5. Male reproductive system

1. Teratoma is the only germ cell tumor arising from all the 3 layers of germ cell i.e ectoderm, endoderm, mesoderm where carcinoma have epithelial origin and sarcoma have mesenchymal origin.
2. Schiller duvl bodies are characteristic feature of yolk sac tumor characterized by central blood vessels surrounded by tumor cells. yolk sac tumor have elevated AFPs as marker.
4. Seminoma is the only malignant tumor of testis and highly radiosensitive.
5. T2 . According to TMN staging T1=Invades lamina propria and T2 = invades muscularis propria.
7. Yolk sac tumor also called endodermal sinus tumor is most common malignant tumor in children under 2-3 yrs
8. SCC of urinary bladder is strongly associated with schistosomiasis infection.
9. Seminoma is highly radiosensitive having overall cure rate of 90%. radiosensitivity depends on high metabolic rate of tumor cells.
11. AFPs and HCGs are characteristic markers of testicular germ cell tumors.
12. Cryptorchidism also known as undescended testis usually 70% of undescended testis are palpable with one testis being undescended.
13. The proliferation in all these elements occur in BPH as prostate is fibromuscular and glandular organ.
14. Post renal azotemia cause urinary outflow obstruction and BPH is the main cause in them.

6. BREAST PATHOLOGY

1. BRCA1 and BRCA2 are the genes responsible for breast carcinomas.
2. Fibroadenoma are benign painless unilateral non fluid filled mobile lumps common in women of reproductive age i.e 14-35 yr less common in post menopause women.
3. Intraductal papilloma is benign tumor grows in the milk ducts and is most common cause of bloody nipple discharge when there is no lump in breast. Mostly there are no symptoms and can be found out

by its unusual discharge which can be either clear or bloody .

4. Atypical hyperplasia is not carcinoma but classified as high risk precursor lesion due to its potential to progress to DCIS and invasive carcinoma while the rest of all are begin lesions.
5. Invasive ductal carcinoma accounts for 75% of breast carcinomas have tendency to metastasize via lymphatics .
6. Estrogen exposure is the most important risk factor in female carcinoma breast bcz breast cells are constantly exposed to female hormones estrogen and progesterone and cells from these cancers have estrogen receptors sites which bind and promote there growth .
7. Tumors with ER/PR positivity has good prognostic factor as they are more likely to respond to hormones therapy as treatment with anti estrogen can block there growth and increase survival.
10. Lobular carcinoma..Loss of CDH1 is the most prevalent gene alteration that lead to loss of E cadherin function distinguish lobular carcinoma from invasive ductal carcinoma.

7. FEMALE GENITAL TRACT

1. All of the above are risk factors for endometrial Cancer. Option E i.e. HSV is linked or associated with risk for cervical Cancer i.e Especially HSV-2.
2. Premalignant lesions are characteristics sequence of endometrial hyperplasia that progress to carcinoma.
EH -- With Atypia (Progression to cancer 29%)
-- without Atypia (Crowded glands,risk of cancer 3%)
3. Bartholin Glands are located in each side of vaginal opening. Sometimes the openings becomes obstructed, causing fluid to back up in gland. Result is painless swelling called bartholin's Cyst.
4. Pap Smear Test is for cervical Cancer, in which cells from cervix are collected detecting any precancerous and cancerous Processes in cervix. (Papanicolaou Test)

5. Krutenberg tumor is metastatic disease to the ovaries composed of mucin riched signet cells. Most Common site is stomach, these tumors spread through lymphatic channels.
6. Serous cystadenocarcinoma is the most common type of epithelial tumors, ranging from size of 0.1 cm Up To 25 cm. Cyst fluid has low amylase & serum carcinoembryo antigen.
7. PCOs are also refered as stein leventhal syndrome, common endocrinopathy characterized by:
 - Hyperandrogenism
 - Hyperinsulinoma
 - Central Obesity
 - Anovulation
 - Polycystic Ovaries
 - Hirsutism
8. Plasma cells are used for the diagnosis of either endometritis in biopsy taken plasma cells are more in follicular phase of menstrual Cycle.
9. Mature teratomas or mature cystic teratoma (MCI) also called as dermoid cysts most common ovarian Germ cell tumor, occuring high in reproductive age. In rare cases , transition into malignant tumor is observed i.e Squamous Cell Carcinoma, otherwise Its benign.
10. Endometrial Adenocarcinoma is followed by hyperplasia. It usually has 4 stages and It increases risk of cancer.
11. Endometriosis is when lining of uterus grows outside the uterus. It start at person 1st menstrual Period and lasts until menopause.
12. Cervical Cancers often squamous cell Carcinoma that arise from infection with high risk human papilloma Virus Serotype 16 and 18.
13. It is malignant Neoplasm having spindle shape and also have some anaplastic subtypes, due to deletions on chromosome 11.

14. Serous cystadenoma composed of cysts and papillae lined by non-stratified /Stratified cuboidal to columnar cells which resembles fallopian tube.
15. Common Ovarian Carcinoma
 - Serous -- Serous Cystadenocarcinoma (Most Common)
 - Endometrioid
 - Mucinous
 - Clear cell carcinoma
16. Granulosa cells tumor produces ' Estrogen' and cause symptom of estrogen excess such as Hyperplasia. Most common in pre-menopausal or post-menopausal.
17. Common sites
Typical (Ovaries (most common) , Fallopian Tubes, Pelvic Peritoneal)
Atypical (GIT, Urinary Tract, soft tissues)
18. Anovulation - No Ovulation
2 scenelos -- High estrogen levels due to persistant of one/more follicles leading to disordered proliferative endometrial.
Premature Involution of Graffian Follicles.
20. Surface Epithelial Tumors (Serous, Mucinous, Endometrial, Clear cell)
Dysgerminoma is composed of germ cells equivalent to testicular Seminoma.
22. 4 Stages
Cancel only in neck Of Cervix (Stage 1)
Stage 2: Cancer spread outside into surrounding Tissues (Stages 2)
Stage 3: From Cervix into structures around it or into lymph nodes in pelvis.
Stage 4: Spread To Bladder or rectum or further.
24. Germ Cell Tumors
 - Dysgerminoma
 - Choriocarcinoma
 - Teratoma (mature and Immature) Mature is (Solid and Cystic --MCT) MCT is mature cystic Teratoma.
26. Dysgerminoma(Female) and seminoma(Male) both are germ cell tumors and they are counter to each other.

27. HPV-16 and HOV-18 : High risk viuses leads to Squamous Cell Carcinoma.
29. Koilocytes describes culmination of specific cellular Events caused by infection with HPV..They Are indicative of Specific HPV infection.
37. All of them are classic symptoms of endometriosis with Dyseruma being the important and distinctive one.
38. Always a sign of trichomoniasis caused by protozoa trichomonas Vaginalis.
39. The most classic sign of hydatid form of mole is elevation (quantitative) Of HCG levels Up To > 100,000 indicating trophoblastic growth and susplcions of molar pregnancy.

GIT & LIVER, PANCREAS

1.	GIT	131
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3.	LIVER	137
5.	SPLEEN	141

1. GIT

1. A 39 years old male came to your OPD with off and on epigastric pain for the last six months.

Provisional diagnosis of peptic ulcer disease was made. For confirmation of diagnosis on endoscopy, from where one should take the biopsy?

- Gastric antrum
- Gastric ulcer
- Gastro esophageal junction
- Duodenal ulcer
- Greater curvature

2. The most frequent esophageal malignancy is:

- Adenocarcinoma
- Fibrosarcoma
- Leiomyosarcoma
- Rhabdomyosarcoma
- Squamous cell carcinoma

3. A 60 years old female presents with 3 months history of intermittent burning sub sternal and retrosternal pain radiating pain radiating to her neck. The burning is usually relieved quickly with antacids. There is no relationship of these symptoms to exercise or exertion. Which of the following must be considered in the differential diagnosis of the patient's problem?

- Acid reflux disease
- Myocardial ischemia
- Peptic ulcer disease
- Panic disorder
- Carcinoma stomach

4. Which salivary gland is the most frequent site for tumor involvement?

- Parotid gland
- Submaxillary gland
- Sublingual gland
- Minor salivary gland
- Parathyroid gland

5. A 25 years old smoker female of European descent presents with complaints of diffuse abdominal pain, disturbed bowel habits, presence of blood and mucus in the stool and weight loss. Endoscopic biopsy of small bowel reveals sharply demarcated deep ulceration of mucosa along with epithelioid granuloma, isolated crypt abscess and presence of chronic inflammatory cells. What is the most probable cause of this patient's suffering?

- Carcinoid small intestine
- Crohn's disease
- Chronic giardiasis
- Gluten sensitive enteropathy
- Ulcerative colitis

6. A 65 years old man presents to the physician because of a palpable mass immediately above the left clavicle (Virchow's node). Biopsy of the mass demonstrate metastatic adenocarcinoma in a lymph node. Which of the following organs should be most strongly suspected as containing the primary tumor?

- Bladder
- Large bowel
- Liver
- Stomach
- Pancreas

7. Exploratory laparotomy of a patient with an acute abdomen demonstrates a long loop of small intestine with a dark red-to-brown, edematous appearance. The patient has a history of atrial fibrillation. The lesion ends abruptly on both the distal and proximal edges, which of the following diagnosis is suggested by this appearance?

- Adenocarcinoma of the colon
- Crohn's disease
- Ulcerative colitis
- Ischemic bowel disease
- Tuberculosis

8. A patient presents to a physician complaining of recurrent episodic diarrhea, triggered by eating too much or drinking alcohol. His wife states that "he turns as red as a beet and starts wheezing" during these episodes. Which of the following would be the most likely cause of his symptoms?

- Carcinoid tumor
- Primary TB
- Recurrent TB
- Adenocarcinoma stomach
- Superior vena cava syndrome

9. Barrett esophagus is a predisposing factor for:

- Squamous cell carcinoma
- Adenocarcinoma
- Basal cell carcinoma
- Gastric carcinoma
- Esophageal reflex disease

10. Hallmark of celiac disease is:

- T-cell mediated chronic inflammatory reaction with an autoimmune component
- B-cell mediated chronic inflammatory reaction
- Autoimmune reaction with an acute inflammatory component
- T-cell and B-cell mediated chronic inflammatory reaction
- Chronic non specific inflammation

11. Commonest site of gut carcinoid tumor is :

- Heum
- Appendix
- Stomach
- Rectum
- Colon

12. Chronic gastritis is defined as

- Chronic inflammation with mucosal strophy
- Chronic inflammation leading to strophy & intestinal metaplasia
- Chronic inflammation of gastric mucosa and submucosa
- Chronic inflammation of gastric mucosa of transient nature
- Chronic inflammation with erosive gastritis

13. Reflux esophagitis is caused by :

- Increased resting tone of lower esophageal sphincter
- Defective esophageal anti-reflux mechanism
- Polypoidal growth in lower end of esophagus
- Esophageal webs
- Aperistalsis

14. "Signet-Ring" malignant cells are found in:

- Diffuse gastric carcinoma
- Expanding growth
- Intestinal type
- Oesophageal carcinoma
- Polypoid tumor

15. Helicobacter pylori commonly causes

- Acute gastritis
- Chronic gastritis
- Gastric ulcer
- Gastric carcinoma
- Reflux oesophaga

1. A	2. E	3. A	4. A	5. B
6. D	7. D	8. A	9. B	10. A
11. B	12. B	13. B	14. A	15. B

16. Prime culprit in inflammatory bowel disease is:
- CD8+ T cells
 - CD4+ T cells
 - Gamma interferon secreted by TH2 cells
 - Excessive activation of TH2 cells
 - Activation of Natural killer cell
17. Which of the following is a major predisposing factor for the development of pseudomembrane colitis?
- Young age
 - Malnutrition
 - Antibiotic use
 - Refined diet
 - Obesity
18. A 57 years old woman with anemia is found to have a decreased vitamin B12 level. Antibodies to intrinsic factor are identified. Levels of all other vitamins are within normal limits. Which of the following is most likely to be associated with this condition?
- Duodenal ulcer
 - Ulcerative colitis
 - Dietary vit. B12 deficiency
 - Atrophic gastritis
 - Angiodysplasia
19. A 25 years old man had been experiencing intermittent diarrhea which, over years, progressed to severe diarrhea, alternating with constipation, rectal bleeding and passage of mucus. The abdomen is tender over the left iliac fossa. Colonoscopy demonstrates inflammation limited to the rectum, with no higher lesions. Which of the following is the most likely diagnosis?
- Celiac disease
 - Crohn disease
 - Hirschprung disease
 - Tropical sprue
 - Ulcerative colitis

20. H. pylori can be detected by the following tests except
- Urea breath tests
 - Biopsy of stomach
 - Serology
 - Colonoscopy
 - Stool culture
21. Barrett esophagus is
- Replacement of squamous epithellum by columnar epithellum in the upper 1/3rd of esophagus
 - Columnar metaplasia of lower 1/3rd of esophagus
 - Seen in young patients
 - Squamous cell carcinoma is more common
 - Is not a premalignant condition
22. Severe autoimmune gastritis is associated with
- Destruction of mucus glands
 - Normal to high gastric acids levels
 - Low gastric acid level to achlorhydria
 - Chronic gastritis
 - Antibodies to chief cells
23. Patient taking medications for her rheumatoid arthritis develop burning epigastric pain and vomiting after few days. Which of the following form of gastritis would most likely be found in this patient?
- Acute gastritis
 - Chronic antral gastritis
 - Chronic fundal gastritis
 - Hypertrophic gastritis
 - Lymphocytic gastritis
24. A 44 years male presented with dysphagia and weight loss. On endoscopy, a fungating ulcerative lesion is noticed at a distance of 20cms from incisor teeth. The most likely lesion is:
- Adenocarcinoma esophagus
 - Carcinoma in situ
 - Squamous cell carcinoma esophagus
 - Esophageal webs
 - Zenker's diverticulum

25. An elderly male presents with history of dysphagia and vague upper abdominal pain. His clinical examination reveals anemia, mass epigastrium and enlarged left supraclavicular lymph nodes. His laboratory investigation includes normal TLC and alpha fetoprotein. What is the most likely disease he is suffering from?
- Hepatocellular carcinoma
 - Carcinoma head of pancreas
 - Gastric carcinoma
 - Carcinoma gall bladder
 - Retroperitoneal lymphoma
26. A 5 years old debilitated child from a previous severe attack of measles, is brought to pediatric clinic with mild ulceration of oral mucosa. The ulcer are mildly painful and covered by easily removable white cured. What is the most likely cause of this ulceration?
- Herpes zoster virus
 - Candida albicans
 - Treponema pallidum
 - Fusospirocheatal infection
 - Human Immunodeficiency virus
27. All of the following statements are true about colorectal carcinoma except
- High fiber diet help in its prevention
 - It is the most common malignant tumor of large intestine
 - More than 99% are well differentiated squamous cell carcinoma
 - Majority of colorectal carcinoma develops through adenoma carcinoma sequence
 - Villous adenoma of more than 4cm size in the large bowel is a strong predisposing factor
28. Endoscopy of a young male having low grade fever, weight loss, episodic loose motion and right lower quadrant tenderness, reveals thickening of terminal ileum, edema and marked narrowing of

- lumen and skip lesions. Which of the following statements is typical of this condition?
- It can affect any portion of gastrointestinal tract, but proximal jejunum is most common site of involvement
 - Inflammation and ulceration limited to mucosa and submucosa with sparing of deeper layers
 - It is a benign, self limited disorder with no complicated sequelae
 - It can cause fistula formation between loops of affected bowel
 - Additional typical findings include crypt abscess and pseudopolyps
29. Which of the following is the most likely precursor lesion for adenocarcinoma colon?
- Peutz Jegher's polyp
 - Hyperplastic polyp
 - Villous adenomatous polyp
 - Inflammatory polyp
 - Juvenile polyp
30. The commonest cause of columnar intestinal metaplasia (Barrett's esophagus) is
- Gastroesophageal regurg disease (GERD)
 - Excessive gastric HCL secretion
 - Excessive use of NSAID
 - Helicobacter pylori infection
 - Excessive intake of alcohol
31. Heaped up margins are characteristic of
- Bergin gastric ulcer
 - Bergin duodenal ulcer.
 - Malignant ulcer
 - Bergin esophageal ulcer
 - None of them

16.B	17.C	18.D	19.E	20.D
21.B	22.C	23.A	24.C	25.C
26.B	27.C	28.D	29.C	30.A

31.C

32. Esophageal causes of hematemesis include all of the following EXCEPT
- Reflux esophagitis
 - Adeno carcinoma
 - Hiatal hernia
 - Hemophilia
 - None of them
33. Malignant transformation of peptic ulcer is
- Rare
 - Occur in 10% of patients
 - Occur in 20% of patients
 - Occur in 30% of patients
 - No malignant transformation
34. Skip lesions are characteristic findings in
- CROHN disease
 - Ulcerative colitis
 - Tropical sprue
 - Microscopic colitis
 - None of them
35. Biopsy of a fungating mass in the esophagus reveals adenocarcinoma. Which of the following condition is associated with this tumor?
- Hiatus hernia
 - Barrets esophagus
 - Iron deficiency anemia
 - Beal carcinoid
 - Scleroderma
36. Which one of the following statement is not true of chronic gastritis?
- Eosinophilic gastritis typically affects female
 - Dysplasia is more marked in auto immune gastritis
 - Cigarette smoking is strongly associated with chronic gastritis
 - The mucosa(lamina propria) contains inflammatory infiltrates of neutrophils
 - Individuals with H.pylori induced chronic gastritis is at increased risk of developing carcinoma stomach

37. The most common site of carcinoid tumor is
- Stomach
 - Biliary tract
 - Rectum
 - Appendix
 - Liver
38. ~~Cardiac~~ disease is also called
- Whipple disease
 - Tropical disease
 - Celiac sprue
 - All of the above
 - Post infections sprue
39. H.pylori causes peptic ulcer by
- Invading mucosa
 - Not invade mucosa but secreting proteases
 - Secreting amylase enzyme
 - Secreting LDH
 - All of the above
40. The most common cause of chronic gastritis
- Infection with helicobacter pylori
 - Alcohol
 - Excessive use of NSAIDS
 - Smoking
 - C+D
41. A male of 55 with history of weight loss and epigastric fullness has palpable left supraclavicular lymph node. Biopsy report reveals metastatic adenocarcinoma. The primary tumor is most probably in
- Pancreas
 - Stomach
 - Kidney
 - Liver
 - Left adrenal gland
42. Appendix is the commonest site of carcinoid tumor. What is the next commonest site?
- Colon

- Ileum
 - Pancreas
 - Rectum
 - Stomach
43. The most commonly cause of barret's esophagus is:
- Cigarette smoking
 - Excess alcohol intake
 - Excessive gastric Hcl secretion
 - Gastroesophageal reflux disease
 - Helicobacter pylori infection of esophagus
44. The most common site of gastric carcinoma is:
- Cardia
 - Body
 - Fundus
 - Antrum and pylorus
 - None
45. All are true about crohn's disease except:
- Skip lesion
 - String sign
 - Creeping fat
 - Pseudopolyps
 - All of the above
46. Pseudomembrane formation is seen in which one of the following type of colitis:
- Ischemic colitis
 - Infectious colitis
 - Clostridium difficile colitis
 - Neonatal necrotizing colitis
 - All of the above
47. Acute appendicitis can be caused by:
- Adenoviral infection
 - Diverticulitis of the cecum
 - Yersinia enterocolitica
 - Enterobius vermicularis
 - All of the above

48. Duodenal ulcer is more common in all except :
- Chronic renal failure
 - Chronic obstructive pulmonary disease
 - Hyperparathyroidism
 - Alcoholic cirrhosis
 - Chronic heart failure
49. Deep ulcers, marked lymphoid reaction, fibrosis, serositis, granuloma mass and fistulas are the features of:
- Ulcerative colitis
 - Crohn's disease
 - Intestinal polyps
 - Malabsorption syndrome
 - Colorectal carcinoma
50. The most common colorictal carcinoma is :
- Squamous carcinoma
 - Basal cell carcinoma
 - Adenoma
 - Adenocarcinoma
 - Mucinous carcinoma

51. The most common fungal infection of oral cavity in immunocompromised individual is:
- Blastomycosis
 - Histoplasmosis
 - Mucormycosis
 - Coccidioidomycosis

32.C	33.A	34.A	35.B	36.A
37.D	38.C	39.B	40.A	41.B
42.B	43.D	44.D	45.D	46.E
47.E	48.E	49.B	50.D	51.A

2. Biliary Tract

1. 'Rokitansky Aschoff sinuses' are microscopic finding in :
- Cholangiocarcinoma
 - Primary biliary cirrhosis
 - Primary sclerosing cholangitis
 - Acute cholecystitis
 - Chronic cholecystitis

2. A 40 years old woman complains of pruritis. She has elevated alkaline phosphatase and positive antimitochondrial antibodies. The most likely diagnosis is:

- Liver abscess
- Hepatitis C
- Primary biliary cirrhosis
- Hemochromatosis
- Sclerosing cholangitis

3. Right hypochondrial pain radiating to the back is the complaint of a fertile, fatty, female of forty years. Likely diagnosis is:

- Cholelithiasis
- Obstructive jaundice
- Hepatitis
- Sclerosing cholangitis
- Extra-hepatic biliary atresia

4. Which of the listed statements is diagnostic of biliary cirrhosis

- Polycystic disease of the liver
- Development of portal hypertension leading to esophageal varices
- Presence of regenerating nodules and fibrous septa on microscopy
- Presence of irregular nodules of different sizes on the surface of the liver
- Presence of anti IgM type antimitochondrial antibodies acting against bile duct components

5. All of the following features are true concerning chronic cholecystitis except

- It has no association with gall stones
- It is more common than acute cholecystitis
- It may be the progression of acute cholecystitis
- The gall bladder wall shows fibrosis on microscope
- Gall bladder wall is infiltrated chiefly by lymphocytes, plasma cells and macrophages

6. The commonest tumor of gall bladder is

- Adenoma

- Lipoma
- Papilloma
- Adenomyoma
- Carcinoma

7. Diagnostic feature of obstructive cholestasis is:

- Bile pigment within hepatic parenchyma
- Foamy degeneration of hepatocytes
- Bile duct proliferation
- Periductular neutrophilic infiltrate

1.E	2.C	3.A	4.E
5.A	6.E	7.C	--

3. Liver

1. A 64 years old patient presents with complaint of right upper quadrant abdominal pain. He is a diagnosed HCV positive for the last 20 years, for which he did not take any medication. He also gives history of ill health, fever, decreased appetite and fatigue for the last few months. Biopsy specimen shows presence of bile and atypical lymphocytes. Apart from other tests which tumor marker out of the following options, you will order to support your diagnosis?

- Beta HCG
- Carcino-embryonic antigen
- Alpha feto protein
- CA-125
- CA-15

2. An outbreak of acute hepatitis in the months of July and August is traced due to the mixing of sewage with drinking water. The patients had jaundice, arthralgias and low-grade fever. Transaminases were markedly raised. None of the patients developed chronic disease. Only two patients died during the outbreak, both were pregnant females. What is the most likely cause of this outbreak?

- HAV
- HEV
- HBV
- HDV
- HCV

3. Chronic hepatitis is most likely to occur after acute infection with which of the following virus?

- Hepatitis A virus
- Hepatitis C virus
- Hepatitis E virus
- Hepatitis G virus
- Hepatitis D virus

4. A 45 years female presents with ascites. Liver biopsy reveals diffuse portal tract bridging fibrosis and nodular regeneration of liver cells without hepatocyte necrosis and cholestasis. The findings are characteristic for:

- Alcoholic hepatitis
- Viral hepatitis
- Drug toxicity
- Cirrhosis
- Chronic congestion

5. A middle age female presented with deranged liver function tests. Anti smooth muscle antibodies are also positive. Biopsy reveals interface hepatitis with prominent plasma cells infiltration. What is your most likely diagnosis?

- Primary biliary cirrhosis
- Primary sclerosing cholangitis
- Autoimmune hepatitis
- Viral hepatitis
- Drug induced hepatitis

6. Which of the following serological marker is diagnosis of window period in HBV infection?

- Anti-HBc of Ig G class
- Anti-HBc of Ig M class
- Anti-HBe
- Anti-HBs
- HBs Ag

7. A 44 years old man presents with the sudden onset of severe right upper quadrant abdominal pain, ascites, tender hepatomegaly and hematemesis. An ultrasound shows thrombosis of hepatic vein. What is the best diagnosis?

- Arnold-chiari syndrome

- Budd-chiari syndrome
- Fitz-Hugh-Curtis syndrome
- Rotor syndrome
- Veno-occlusive disease

8. A 70 years old man developed Hepatocellular carcinoma. The most likely enzyme to be elevated is

- Human Chorionic Gonadotrophin
- Alkaline phosphatase
- Carcino Embryonic Antigen
- Alpha Feto-Protein
- Serum Glutamic Oxaloacetic Transaminase

9. A genetic autosomal recessive disorder of copper metabolism characterized by hepatocellular degeneration is:

- Reye's syndrome
- Wilson's disease
- Primary biliary cirrhosis
- Congenital hepatic fibrosis
- Peliosis hepatitis

10. Which of the following serum levels will help on distinguishing an acute liver disease from chronic liver disease :

- Aminotransaminase
- Alkaline phosphatase
- Bilirubin
- Albumin
- Creatinine

11. Which one of the following hepatitis viruses have significant perinatal transmission:

- Hepatitis A virus
- Hepatitis B virus
- Hepatitis C virus
- Hepatitis E virus
- Hepatitis D virus

1.C	2.B	3.B	4.D	5.C	6.B
7.B	8.D	9.B	10.D	11.B	

12. An autopsy is performed on a patient that has died of fulminant hepatic failure. The liver weighs 900 gm histologic examination shows large area of acute hypatocytic necrosis with scattered. Which of the following is the most common virus causing this condition?

- Hepatitis A virus
- Hepatitis B virus
- Hepatitis C virus
- Hepatitis D virus
- Hepatitis E virus

13. Mallory bodies are characteristically seen in:

- Alcoholic fatty liver
- Hepatitis B
- Primary biliary cirrhosis
- Wilson disease
- Alcoholic hepatitis

14. Window period in hepatitis is the interval between

- Disappearance of HBsAg and appearance of anti HBs
- Appearance of HBcAg
- Disappearance of HBcAg and appearance of anti HBc
- Disappearance of HBsAg and appearance of anti HBc
- Appearance of anti HBc

15. Which serological marker of HBV (hepatitis B virus) infection indicates recovery and immunity?

- Viral DNA polymerase
- HBc antigen
- Anti - HBs
- HBsAg
- Anti HBc

16. A 26 years old nurse developed fatigue, a low grade fever, polyarthrits and urticaria. Two months earlier she had cared for a patient with hepatitis.

Which of the following findings are likely to be observed in this nurse?

- A negative hepatitis B surface antigen test
- Elevated ALT and AST levels
- A positive rheumatoid fever
- A positive monospotTM test
- Reversal of A/G ratio

17. The classic antibody response pattern following infection with hepatitis A is:

- Increase in IgM antibody; decrease in IgM antibody; increase in IgG antibody
- Detectable presence of IgG antibody only
- Detectable presence of IgM antibody only
- Decrease in IgM antibody; increase in IgG antibody of the IgG3 subtype
- Decrease in anti HAV IgG

18. The presence of HBs Ag, anti-HBc and often HBc Ag is characteristic of:

- Early acute phase HBV
- Early convalescent phase HBV
- Recovery phase of acute HBV
- Carrier state of HBV
- Chronic liver disease due to HBV

19. Carrier state does not exist in:

- HBV
- HAV
- HCV
- Delta virus
- HGV

20. The most common cause of chronic viral Hepatitis is:

- HAV infection
- HBV infection
- HCV infection
- HDV infection
- HEC infection

21. Which of the given statements is not compatible with acute fulminant hepatitis?

- It carries a very high mortality rate
- Biopsy of such a liver reveals no fibrosis
- In majority of cases, it is caused by hepatotropic viruses
- It may be caused by mycotoxins of a mushroom, amanita pallids
- Biopsy of liver with acute fulminant hepatitis shows necrosis only of few cells

22. A 45 days old infant developed symptoms and signs of acute liver failure. Child was found to be +ve for HBsAg. The mother hepatitis B serological profile is likely to be

- HBsAg+ve only
- HBsAg and HBcAg+ve
- HBsAg and AntiHBcAb+ve
- Mother infected with mutant HBV
- HBcAg only

23. In hepatitis B, the antigen indicating active viral replication is

- HBsAg
- HBcAg
- HBeAg
- Anti HBc
- Anti HBe

24. All of the following statements are true regarding hepatocellular carcinoma except

- 60-80% HCC arise in cirrhotic liver
- HCC is more common in Europe than Asia
- PSA is used as a tumor marker for hepatocellular carcinoma
- The most important reliable microscopic features of HCC is the presence of bile pigment in tumor cells
- Vertical transmission of HBV in infancy is mainly responsible for its increased incidence in Asian and African continents

25. All of the given statements are true of hepatocellular jaundice except:

- Pruritus is not a feature of it
- Serum ALT level is markedly elevated
- INH may cause hepatocellular jaundice
- It is most commonly due to viral hepatitis
- Serum alkaline phosphate level is markedly raised in it

26. Which one of the given agents does not lead to chronic hepatitis?

- Hepatitis B virus
- Methotrexate
- Hepatitis E virus
- ALPHA-1 anti trypsin deficiency
- Alcoholic hepatitis

27. Which of the given serological markers is diagnostic of window period in HBV infection?

- Anti-HBc of IgG class
- Anti-HBc of IgM class
- Anti-HBc
- Anti-HBs
- HBsAg

28. All of the following statements regarding hepatitis B are true EXCEPT:

- Anti HBs persists life long impairing immunity against reinfection
- Anti HBs is used to assess the state of immunity after vaccination
- HBcAg is a marker of maximum infectivity
- HBsAg disappears from the blood with in the month of illness
- HBsAg is used for screening of pregnant women

12.B	13.E	14.A	15.A	16.B	17
18.A	19..B	20.C	21.E	22.B	23.C
24.C	25.A	26.C	27.B	28.D	---

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- c. Anti-HBc
- d. Anti-HBs
- e. HBsAg

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18.A	19..B	20.C	21.E	22.B	23.C
24.C	25.A	26.C	27.B	28.D	---

29. Mallory bodies are seen in all except:

- Alcoholic hepatitis
- Primary biliary cirrhosis
- Wilson's disease
- Drug induced hepatitis
- Hepatocellular carcinoma

30. Which does not occur in acute viral hepatitis:

- Periportal fibrosis
- Focal necrosis
- Diffuse liver cell injury
- Hepatocytic regeneration
- All of the above

31. A 13 years old boy presents to the paediatrician with extrapyramidal signs, including a resting and kinetic tremor. An eye examination demonstrates the presence of keyser fleisher rings, and his lab reports reveal increase liver enzymes. The patient is associated with the accumulation of:

- Copper
- Councilman bodies
- Cosinophilic hyaline inclusion
- Glycogen
- Iron

32. A 56 year old alcoholic man presents to the emergency department with confusion and lethargy on physical examination he is visibly jaundiced with ascites. Laboratory studies reveal increased prothrombin time and prolonged activated partial thromboplastin time as well as significantly increased serum ammonia levels. Given a significantly increase serum ammonia which of the following findings might you expect to see:

- Asterixis
- Capillary telangiectasia
- Caput medusae
- Gynaecomastia
- Palmer crythema

33. Cirrhosis accounts for portal hypertension in:

- 90% cases
- 75% cases
- 50% cases
- 25% cases
- 10% cases

29.D	30.A	31.A	32.A	33.A
------	------	------	------	------

5. Spleen

67. Massive enlargement of the spleen may occur from the following causes except

- Aplastic anemia
- Chronic myeloid leukemia
- Chronic malaria
- Leishmaniasis
- Thalassemia major

KEY:

HINTS AND EXPLANATION

1. GIT

2. Adenocarcinoma is most common in US and white men

- Rhabdomyosarcoma is rare aggressive tumour

- Fibrosarcoma is rare in esophagus

- leiomyosarcoma is less than 1% of all malignant esophageal tumours

- SSC also called epidermoid carcinoma is the most frequently found malignant tumour of esophagus

3. MI is usually associated with exercise and exertion

- Panic disorder is accompanied with tachycardia and shortness of breath

- Carcinoma of stomach has long history

- PUD pain occurs around meal time and is between breast bone and belly button

4. About 85% of salivary gland tumors occur in the parotid glands, followed by the submandibular and minor salivary glands, and about 1% occur in the sublingual glands.

10. Deep ulcerations, granulomas, crypt abscess and chronic inflammatory cells are pathognomonic for Crohn's disease

6. Virchow's node is the end node of the supraclavicular chain of

lymph nodes and is located at the thoracic duct near the jugulosubclavian venous junction where incoming lymph is introduced

back into the venous circulation through the subclavian vein;

therefore, stomach malignancy is mostly metastasized to Virchow's nodes.

7. History of atrial fibrillation is mostly related to ischemic bowel disease as embolus from atrial fibrillation goes to systemic circulation and causes ischemia.

8. Flushing is the most frequent symptom of carcinoid syndrome and occurs in 85% of cases. It presents as faint pink to red discoloration of the face and upper trunk and is

provoked by tyramine-containing foods such as blue cheese or red wine.

9. Adenocarcinoma because the normal squamous epithelium is transformed to columnar epithelium in Barrett esophagus which leads to adenocarcinoma.

10. Autoantibodies to type 2 transglutaminase (TG2) is a hallmark of celiac disease. Absence of intestinal villi and lengthening of the intestinal crypts characterize the mucosal lesions in untreated celiac disease. More lymphocytes infiltrate the epithelium.

12. Chronic gastritis is a long-term condition in which the mucus lined layer of the stomach, also known as the gastric mucosa, is inflamed or irritated over a longer period of time which leads to intestinal metaplasia.

15. H. pylori most commonly causes gastritis and peptic ulcer. So correct answer will be gastritis.

16. CD8+ T cells are involved in the pathogenesis of inflammatory bowel disease (IBD), a complex multifactorial chronic disease. Low

avidity autoreactive CD8+ T cells can escape both central and peripheral tolerance and may

trigger autoimmune reactions to a microbial mimic of self-antigen.

18. Chronic atrophic autoimmune gastritis is an autoimmune disease characterized by progressive parietal cells destruction leading to hypochlorhydria and intrinsic factor deficiency. These alterations may result in vitamin B12 deficiency and iron malabsorption.

19. Inflammation limited to rectum, left iliac fossa tenderness, altered bowel habits and bleeding with mucus discharge are pathognomonic for ulcerative colitis

20. Colonoscopy is a procedure to see inside of rectum and colon. H. pylori rarely resides in colon.

21. Barrett esophagus is columnar metaplasia of lower 1/3rd of esophagus.

22. Chronic atrophic autoimmune gastritis is an autoimmune disease characterized by progressive parietal cells destruction leading to hypochlorhydria and intrinsic factor deficiency. These alterations may result in vitamin B12 deficiency and iron malabsorption.

23. Although NSAIDs (aspirin, ibuprofen, naproxen) decrease pain and inflammation, they also interfere with a hormone needed to produce the mucus that protects the stomach lining and causes acute gastritis.

24. 20 cm from incisors means upper portion of esophagus which is common location for squamous cell carcinoma.

26. Immunocompromised child, removable white cured ulcer. Pathognomonic for candida albicans.

28. Its chronic disease and fistulas can be formed. All other options are found in ulcerative colitis.

2. BILIARY TRACT

1. Rokitsansky-Aschoff sinuses are microscopic findings associated with gallbladder

conditions, particularly chronic cholecystitis. These sinuses are small outpouchings or

invaginations of the gallbladder wall that extend into the muscle layer. They are often observed

in cases of long-standing inflammation of the gallbladder, indicating chronic irritation and

changes in the tissue.

2. Autoimmune Nature: PBC occurs when the body's immune system mistakenly attacks and damages the bile ducts in the liver. This leads to inflammation and scarring, which can eventually result in liver cirrhosis.

Symptoms: Common symptoms include fatigue, itching (pruritus), dry eyes and mouth, and abdominal discomfort. As the disease progresses, symptoms of liver cirrhosis may develop, such as jaundice, fluid retention, and confusion. Diagnostic Markers: Blood tests often reveal elevated levels of liver enzymes, as well as specific autoantibodies associated with PBC. One of the hallmark autoantibodies is antimitochondrial antibody (AMA).

3. Cholelithiasis, or gallstone formation, is more common in women due to factors like hormonal changes (such as pregnancy, hormone therapy, and contraceptives), obesity, and aging. Pregnancy-related hormonal shifts and obesity contribute to the risk. Symptoms include upper abdomen pain, bloating, and nausea. 6. The most common tumor of the gallbladder is adenocarcinoma, a type of cancer that originates from the glandular cells lining the gallbladder.

3. LIVER

1. The alpha-fetoprotein (AFP), it is primarily used as a tumor marker to detect certain types of cancers, particularly liver cancer (hepatocellular carcinoma). Elevated AFP levels in the blood can suggest the presence of liver issues, including cirrhosis or liver cancer. While HCV can increase the risk of liver cancer, the primary diagnostic methods for HCV are different, involving tests that detect HCV antibodies or the virus's genetic material (RNA).

2. HEV, it's a viral infection that primarily affects the liver. Hepatitis E is usually spread through contaminated water or food and can cause symptoms similar to other forms of hepatitis, such as

jaundice, fatigue, and abdominal pain. Most cases of Hepatitis E are acute and resolve on their own, but in some cases, especially in individuals with weakened immune systems, it can lead to more severe complications.

3. Hepatitis C virus (HCV) can cause chronic hepatitis by initially triggering an immune response that leads to liver inflammation and damage. Despite the immune system's efforts, HCV can persistently infect liver cells due to its ability to mutate and evade the immune response. This ongoing infection causes continuous inflammation, which can lead to liver scarring (fibrosis) and eventually progress to cirrhosis.

6. The presence of IgM antibodies against hepatitis B core antigen (anti-HBc IgM) in the blood indicates recent or acute infection with hepatitis B virus (HBV). These antibodies are produced in response to a new or ongoing infection. They are typically detectable before the appearance of hepatitis B surface antigen (HBsAg), suggesting an early stage of acute HBV infection or recent exposure to the virus.

7. Diagnosing Budd-Chiari syndrome involves clinical examination and ultrasound imaging. During examination, assess symptoms like abdominal pain, an enlarged liver, ascites, and jaundice. During ultrasound:

- Visualize hepatic veins for obstructions.
- Measure liver size and evaluate texture.
- Use Doppler to assess blood flow and detect abnormalities.
- Look for collateral circulation and signs of ascites.
- Check for evidence of thrombosis.

9. Wilson's disease is a rare genetic disorder causing copper accumulation in the liver and brain due to ATP7B gene mutations. Symptoms include liver issues, neurological problems (tremors, dystonia), Kayser-Fleischer rings in the eyes, hemolytic anemia, and psychiatric symptoms. Diagnosis involves clinical assessment, blood and urine tests, and

genetic testing. Treatment includes chelation therapy and dietary changes.

10. Chronic Liver Disease: In cases of chronic liver disease, such as cirrhosis, long-term damage to the liver can lead to decreased albumin production. As a result, albumin levels might be lower than normal. Acute Liver Disease: In acute liver injury or disease, albumin levels might not change significantly in the short term, as albumin production requires more time to be affected.

11. Perinatal transmission of Hepatitis B virus occurs when an infected mother passes the virus to her baby during childbirth. This can happen through contact with the mother's blood, vaginal fluids, or open skin. Vaccination and, if needed, hepatitis B immune globulin are used to prevent transmission. Screening pregnant women for HBV helps manage the risk.

12. Hepatitis C infection triggers inflammation in the liver tissue, particularly in lobules and portal tracts. This can lead to cell damage, fibrosis (scar tissue formation), and fatty changes in liver cells. Infiltration of immune cells and lymphocytes contributes to the inflammatory response.

14. The "window period" in hepatitis refers to the time between initial infection and when the virus or antibodies become detectable in blood tests. For hepatitis A, it's a few weeks after exposure; for hepatitis B, about 1 to 3 months for HBsAg and longer for antibodies; and for hepatitis C, about 2 to 12 weeks for antibodies. Testing accuracy and timing vary, so consulting a healthcare provider is essential.

15. Anti-HBs refers to antibodies produced in response to hepatitis B virus (HBV) exposure or vaccination. It indicates immunity to HBV. Positive results mean past infection resolution or successful vaccination, offering protection against future HBV infection.

16. In hepatitis, elevated ALT and AST levels indicate liver inflammation and damage. These enzymes, normally found within liver cells, leak into the bloodstream when the liver is affected.

Hepatitis causes inflammation, leading to liver cell damage and the release of ALT and AST. Monitoring these levels helps assess the severity of hepatitis and its progression.

17. After a hepatitis A infection, the body produces IgM antibodies indicating recent infection, and later IgG antibodies for long-term immunity. IgM declines over time, while IgG persists, providing protection from future infections. Testing for these antibodies helps diagnose, stage the infection, and assess immunity status.

18. The presence of HBsAg, anti-HBc, and HBeAg indicates an active and replicating hepatitis B virus (HBV) infection. This combination suggests ongoing viral multiplication and potential transmission.

19. Hepatitis A is typically not associated with a carrier state. In most cases, individuals who contract hepatitis A will recover fully and develop immunity to the virus, preventing them from becoming chronic carriers.

Unlike hepatitis B and C, which can lead to chronic infections and carrier states in some individuals, hepatitis A does not usually result in long-term carrier status or chronic liver disease.

20. The most common causes of chronic viral hepatitis is hepatitis C virus (HCV) infections. These two viruses are responsible for the majority of cases of chronic viral hepatitis worldwide.

Chronic viral hepatitis can lead to long-term liver inflammation, which, if left untreated, can result in liver cirrhosis, liver failure, or even hepatocellular carcinoma.

21. Acute fulminant hepatitis is a severe and rapidly progressing form of hepatitis characterized by massive necrosis (cell death) of liver cells. This extensive necrosis leads to severe

impairment of liver function and can result in acute liver failure. The extensive necrosis of liver cells in acute fulminant hepatitis is what distinguishes it from less severe forms of hepatitis, where liver damage might be more limited.

22. The infective state of hepatitis B is identified through a specific serological profile including:..... Positive HBsAg (indicating active infection).... positive HBeAg (indicating active viral replication)..

24. PSA (Prostate-Specific Antigen) is not typically used as a tumor marker for hepatocellular carcinoma (HCC). PSA is a protein primarily associated with prostate health and is used as a marker for prostate cancer.

25. The exact mechanism of pruritus in hepatocellular jaundice is not fully understood, but it's thought to be related to the buildup of bilirubin and other substances in the skin. These substances can irritate nerve endings and cause itching.

26. Hepatitis E virus (HEV) is generally considered to cause acute hepatitis, meaning that it leads to a short-term infection characterized by symptoms such as jaundice, fatigue, and abdominal pain. Most cases of HEV infection resolve on their own without the need for specific treatment, and the individual typically recovers within a few weeks to a couple of months.

27. During the window period of HBV (hepatitis B virus) infection, the specific serological marker that becomes detectable is **HBsAg** (Hepatitis B Surface Antigen). HBsAg is the earliest marker to appear after exposure to the virus, typically within 1 to 3 months. Detection of HBsAg indicates active infection, and it serves as a crucial marker for diagnosing early HBV infection.

28. In most cases of acute hepatitis B infection, HBsAg (Hepatitis B Surface Antigen) is present in the blood for a period of several weeks to a few months after the onset of illness. It

typically appears shortly after infection and can persist for an average of about 1 to 3 months. 29. Mallory bodies are not typically associated with primary biliary cirrhosis (now known as primary biliary cholangitis or PBC), which is an autoimmune liver disease primarily affecting the bile ducts. Mallory bodies are more commonly linked to conditions like alcoholic liver disease and drug-induced hepatitis. In PBC, the main pathological changes are inflammation and destruction of the small bile ducts within the liver.

30. Periportal fibrosis is not a typical feature of acute viral hepatitis. Acute viral hepatitis is characterized by inflammation of the liver caused by various viral infections (such as hepatitis A, B, C, etc.). Periportal fibrosis, on the other hand, usually develops over a longer period and is associated with chronic liver diseases like chronic hepatitis B or C, non-alcoholic fatty liver disease (NAFLD), and others. It involves the accumulation of fibrous tissue around the portal tracts in the liver.

31. Kayser-Fleischer rings are a characteristic finding in Wilson's disease, a rare genetic disorder that leads to copper accumulation in the body, particularly in the liver and brain. These rings are a result of copper deposits in the cornea of the eye and appear as a golden-brown to greenish-brown discoloration around the edge of the iris. Kayser-Fleischer rings are a diagnostic hallmark of Wilson's disease and can be detected during an eye examination. Wilson's disease can lead to various neurological and hepatic symptoms.

32. Asterix is commonly associated with liver failure, particularly hepatic encephalopathy, a condition where the liver's inability to clear toxins leads to neurological symptoms.

ENDOCRINE PATHOLOGY

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1. Pituitary Gland

1. Hyperfunction of anterior pituitary in pre-pubertal children generally results in:

- Acromegaly
- Addison's disease
- Cushing's syndrome
- Gigantism
- Hyperprolactinemia

2. A 36 year old man is brought to the emergency department by his wife because of lethargy, weakness and confusion. Serum sodium and serum osmolality are markedly decreased. Urine osmolality is increased. These findings are most likely related to:

- Adenoma of anterior pituitary
- Adenoma of posterior pituitary
- Bronchogenic carcinoma
- Diabetes Insipidus
- Sheehan's syndrome

3. Which of the following hypothalamic hormones has got negative effect on prolactin secretion?

- TRH
- Dopamine
- Somatostatin
- GHRH
- CRH

4. Acromegaly is due to:

- Pituitary atrophy
- Increased growth hormone levels
- Obesity
- Decreased ACTH
- Hyperthroidism

5. All of the following may lead to hyperprolactinemia except:

- Nipple stimulation
- Pregnancy
- Gonadotrophin
- Lactotroph adenoma
- Mass in suprasellar compartment

6. An MRI of a driver shows large pituitary macroadenoma. TFT's are given with TSH 8, T4 11. Clinically he is hypothyroid. His PRL is twice normal. Most likely diagnosis:

- Non-functioning pituitary adenoma and primary hypothyroidism
- Primary hypothyroidism and secondary pituitary enlargement
- TSH secreting pituitary adenoma
- Prolactinoma
- Insulinoma

1.D	2.C	3.B	4.B	5.C	6.
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2. Thyroid Gland

1. A 55 year old woman presented with weight gain, cold intolerance and depression. Which of the following investigations should be used as the first test for screening of functional thyroid disorders?

- Serum tri-iodothyronine (T3)
- Serum thyroxine (T4)
- Serum TSH
- Thyroid binding globulin
- Anti thyroid antibodies

KEY: C

2. A patient with graves disease receives anti thyroid drugs and propranolol prior to subtotal thyroidectomy. Which of the following histopathological aspects will regress following such treatment?

- a. Follicular hyperplasia
- b. Glandular hyperplasia
- c. Lymphocytic infiltration
- d. Presence of hurthle cells
- e. Presence of lymphoid follicles

3 Name of the 1st line single test for thyroid function evaluation is:

- a. Free T4
- b. TBG
- c. T3
- d. TSH
- e. TRH

A 28 year old man has been constantly intolerant to heat. He complains that the work area is too hot. He seems nervous and has been eating more but has lost 5kg weight in the past 2 months. On physical examination temperature is 37.5 C, pulse 101/minute, respiratory rate 22/min and blood pressure 145/85mmHg. Which of the following laboratory findings is most likely to be present in this man?

- a. Decreased plasma insulin
- b. Increased ACTH
- c. Decreased catecholamines
- d. Decreased TSH
- e. Decreased iodine uptake

5. Patients with hashimoto thyroiditis are at increased risk for developing:

- a. Papillary thyroid carcinoma
- b. Follicular thyroid carcinoma
- c. B cell non hodgkin lymphoma
- d. Hodgkin lymphoma
- e. Medullary carcinoma

6. In thyroid cancers, the "Orphan Annie eye" nuclei is feature of:

- a. Papillary carcinoma
- b. Follicular carcinoma
- c. Medullary carcinoma
- d. Anaplastic carcinoma
- e. Follicular and papillary carcinoma

31. A 70 years old lady presents with complaint of swelling in front of neck. A biopsy of thyroid gland reveals massive fibrous tissue replacing most of the thyroid parenchyma. Which of the following physical finding would help best in conforming the diagnosis?

- a. Massive soft thyroid gland
- b. Protrusion of eye ball
- c. Tenderness of thyroid gland
- d. Very firm wood like thyroid gland
- e. Single large thyroid nodule

8. Biochemical findings of primary hypothyroidism are:

- a. Normal TSH, decreased T3 and T4
- b. Decreased TSH, increased T3 and T4
- c. Decreased T3 and increased TSH
- d. Decreased TSH, decreased T3 and T4
- e. Increased TSH, decreased T3 and T4

9. Which of the following tests should be done first when assessing the functional status of the thyroid gland?

- a. A total T4 level
- b. Total triiodothyronine level
- c. Thyroid stimulating hormone(TSH) level
- d. Fine needle aspiration
- e. Radioiodine scan

10. PSA is a tumor marker of:

- a. Small cell carcinoma lung
- b. Medullary carcinoma thyroid
- c. Carcinoma pancreas
- d. Recurrent osteoclastoma
- e. Prostatic carcinoma

11. A young lady presents with complaints of increased sweating, weight loss and tremor hands. Physical examination is suggestive of thyrotoxicosis. Laboratory investigation would reveal a grossly reduced level of which of the following tests?

- a. T3
- b. T4
- c. TBG
- d. TSH
- e. Serum cholesterol

12. A female of 45 years age came with pain in neck with swallowing, fever, malaise and enlargement of thyroid. She has upper respiratory tract infection. On investigations her total leukocyte count and ESR and T3 were raised. What is the most probable diagnosis?

- a. Subacute lymphocytic thyroiditis
- b. Subacute granulomatous (de Quervain) thyroiditis
- c. Riedel thyroiditis
- d. Hashimoto thyroiditis
- e. Palpitation thyroiditis

13. A 35 year old woman presents with amenorrhea and weight loss despite increased appetite. The history and physical examination reveal exophthalmos, fine resting tremor tachycardia and warm, moist skin. Laboratory tests for thyroid function would be expected to yield a decreased value for which of the following?

- a. Free T4
- b. Radioactive iodine uptake
- c. T3 resin uptake
- d. T3
- e. Thyroid stimulating hormone

14. A 4 month old child is brought to pediatrician for evaluation. The mother received no prenatal care and states that she has a thyroid condition. The child appears markedly developmentally delayed, with coarsened features, macroglossia and an umbilical hernia. The child has which of the following conditions?

- a. Cushing disease
- b. Acromegaly
- c. Diabetes insipidus
- d. Cretinism
- e. Thyroglossal duct cyst

3.	4.D	5.C	6.A	7.D	8.E
9.C	10.E	11.D	12.B	13.E	14.D

3. Pancreas

1. Which one of these satisfy the diagnostic criteria for diabetes mellitus using blood glycosylated haemoglobin levels in percentage?

- a. HbA1c <5.5%
- b. HbA1c <4.5%
- c. HbA1c >6.5%
- d. HbA1c >11.1%
- e. HbA1c levels between 5.7% and 6.4%

2. A 48 year old senior male officer complains of polyuria and polydipsia for the last 2 months. During his medical check-up, his fasting blood glucose was found to be 7.9 mmol/L (142mg/dl). Which of the following statements is correct?

- a. Diabetes mellitus is confirmed
- b. Requires repeating of HbA1c
- c. Requires OGTT
- d. Urine for glucose examination
- e. Requires repeating of FBG

3. A 37 year old obese man presents with signs and symptoms of hyperglycemia. After appropriate workup he is diagnosed as having type II diabetes mellitus which is due in part to insulin resistance. Laboratory evaluation of his serum also finds hypertriglyceridemia which is due to his diabetes. The most common type of secondary hyperlipidemia associated with diabetes mellitus is characterized by elevated serum levels of which one of the following substances?

- a. Chylomicrons
- b. High density lipoproteins
- c. Intermediate density lipoproteins
- d. Low density lipoproteins
- e. Very low density lipoproteins

1.C	2.A	3.D
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4. Which of the following is not a feature of uncontrolled diabetes?

- a. Polyuria
- b. Polydipsia
- c. Polyphagia
- d. Anemia
- e. Delayed wound healing

5. Patients with diabetes mellitus have an increased risk of all of the following except:

- a. Cataracts
- b. Infections
- c. Increased atherosclerosis
- d. Peripheral neuropathy
- e. Pancreatic carcinoma

6. Which one of the given values of blood glucose is confirmatory for diabetes mellitus?

- a. Fasting blood glucose of 120mg/dl
- b. Random blood glucose of 250mg/dl
- c. Two hours post prandial glucose of 160mg/dl
- d. Two hours oral glucose tolerance value of 225mg/dl
- e. One hour blood glucose of 180mg/dl after glucose load during OGTT of a pregnant lady

7. Persons with impaired glucose tolerance are at risk of:

- a. Cardiovascular diseases
- b. Renal diseases
- c. Cerebral diseases
- d. Liver diseases
- e. Intestinal diseases

8. Which of the following laboratory test findings best distinguishes type I diabetes mellitus from other forms of diabetes?

- a. Elevated haemoglobin A levels
- b. Glucosuria
- c. Hyperglycemia
- d. Ketoacidosis
- e. Decreased plasma insulin concentration

9. Which of the following is not likely to occur in patient with diabetic ketoacidosis?

- a. Elevated blood glucose
- b. Presence of glucose in urine
- c. Metabolic alkalosis
- d. Positive ketone bodies in urine
- e. Polyuria with dehydration

10. Which of the following features is common to both type I and type II diabetes?

- a. Presence of islet cells antibodies
- b. Association with certain major histocompatibility complex (MHC) class II alleles
- c. Marked resistance to the action of insulin
- d. Non-enzymatic glycosylation of hemoglobin
- e. Concordance rate of more than 90% in monozygotic twins

11. Essential feature for the diagnosis of Diabetes Mellitus :

- a. Anti-islet cell antibodies
- b. Glucagon deficiency
- c. Hyperglycemia
- d. Hyperinsulinemia
- e. Insulin deficiency

12. Fasting plasma glucose (FPG) of a 48 year old senior male officer during his "Annual check-up" was found to be 7.9 mmol/L (142mg/dl).

- a. DM is confirmed
- b. Requires repeating of FBG
- c. Requires repeating of AIC
- d. Requires OGTT
- e. Requires urinalysis

13. The most prevalent diabetes mellitus in pregnancy is:

- a. Gestational DM
- b. Gestational Impaired Glucose Tolerance
- c. Overt DM
- d. Type I DM
- e. Type II DM

14. All are the diagnostic tests for the diagnosis of DM except:

- a. HbA1c
- b. Fasting blood glucose
- c. Random blood glucose
- d. OGTT
- e. 2 hr post prandial

15. A 28 year old man is evaluated for recurrent peptic ulcer disease, apparently refractory to pharmacologic intervention. Serum gastrin is markedly elevated. These findings are most characteristic of which of the following?

- a. Cushing syndrome
- b. Glucagonoma
- c. Whipple triad
- d. Zollinger-Ellison syndrome
- e. Acromegaly

16. During the pathogenesis of pancreatitis which enzyme after activation from its proenzyme form, can activate other enzymes, clotting, kinin and complement systems?

- a. Lipase
- b. Phospholipase
- c. Trypsin
- d. Elastase
- e. Alpha amylase

17. The most common location for pancreatic neoplasm is:

- a. Body of pancreas
- b. Tail of pancreas
- c. Head of pancreas
- d. Diffuse involvement
- e. Vasculature

18. Which one of the given statements is not commensurate with carcinoma pancreas?

- a. It is most commonly adenocarcinoma
- b. Virtually all carcinoma arise in acinar epithelium

- c. It may be associated with migratory thrombophlebitis
- d. Majority of the tumors arise in the head of pancreas
- e. Carcinoma arising in the tail of pancreas usually manifest by distant metastasis

19. A 45 years old female patient is a diagnosed case of cholecystitis. She suddenly develop acute abdominal pain which is radiating to upper back, associated with nausea and vomiting. What is the most specific investigation in this patient?

- a. C reactive protein
- b. Leukocytosis
- c. Serum lipase
- d. Serum amylase
- e. Ultrasound abdomen

20. The most common (85%) pancreatic neoplasm is:

- a. Squamous cell CA
- b. Ductal adenocarcinoma
- c. Mucinous cystadenocarcinoma
- d. Pancreatoblastoma
- e. Solid pseudo papillary tumor

4.D	5.E	6.D	7.A	8.E	9.C
10.D	11.C	12.B	13.A	14.E	15.D
16.	17.	18.	19.	20.	

4. Adrenal Gland

1. The most common cause of hypercortisolism (cushing syndrome) is:

- a. Adrenal adenoma
- b. Adrenal carcinoma
- c. Cushing's disease
- d. Exogenous administration of steroids
- e. Macronodular hyperplasia

KEY:D

ENDOCRINE PATHOLOGY

2. Which of the following tissues is most likely the site for an extra adrenal pheochromocytoma?
- Islets of Langerhans
 - Liver
 - Lymph nodes
 - Brain
 - Paraganglia
3. Which of the following is the most common cause of Cushing's syndrome?
- Exogenous corticosteroids
 - Adrenal cortical carcinoma
 - Oat cell carcinoma of the lungs
 - Basophilic adenoma of the pituitary
 - Adrenal adenomas
4. Which of the following is true regarding Addison's disease?
- It is characterized by an overproduction of catecholamines
 - Most cases are due to infection
 - It is also called primary chronic adrenal insufficiency
 - The onset is sudden
 - Patients are often hypertensive
5. Which of the following is true regarding Pheochromocytoma?
- It can cause hypertension
 - It is an aggressive malignant tumor
 - It occurs only in the adrenal gland
 - It is derived from neural crest cells
 - Many tumors have 1p deletion
6. A patient with Cushing syndrome may present with any of the following except:
- Obesity
 - A buffalo hump
 - Moon faces
 - Bronze or hyperpigmented skin
 - Glucose intolerance

7. In Cushing syndrome, the glucocorticoids induced effects mimic:
- Diabetes mellitus
 - Thyrotoxicosis
 - Rickets
 - Malaria
 - Marfan syndrome
8. Which of the given options is not true of pheochromocytoma?
- It is not always foreign
 - It is not exclusive to adrenal medulla
 - It is recognized cause of sudden death
 - It arises from chromaffin cells of adrenal medulla
 - It may be diagnosed by estimation of 5-HIAA in urine
9. Which of the following characteristics best describes essential hypertension?
- Can be caused by adrenal tumors
 - Is commonly seen with aortic coarctation and pheochromocytoma
 - Causes arteriolar changes in the kidneys
 - May lead to diabetes
 - Is commonly seen in atherosclerosis
10. The commonest cause of Addison's disease is:
- Autoimmunity
 - Tuberculosis
 - Metastasis
 - Adrenal hyperplasia
 - Adrenal adenoma
11. All of the following are true about Cushing syndrome except:
- It may be due to adrenal cortical adenoma
 - It is associated with signs of vitiligo
 - It may be associated with Oat cell carcinoma
 - It causes breakdown of protein
 - It may be due to raised level of serum cortisol

TMM SURVIVAL

12. Most common granulomatous disease causing adrenal insufficiency:
- Tuberculosis
 - Histoplasmosis
 - Sarcoidosis
 - Fungal infection
 - Cytomegalovirus
13. Most common factor leading to Cushing syndrome is:
- Idiopathic
 - Drugs
 - Infection
 - Inflammation
 - Glucocorticoids
14. Which is not a feature of Grave's disease?
- Exophthalmos
 - Pre-tibial myxedema
 - Weight loss
 - Bradycardia
 - Enlarged thyroid gland

1.E	3.A	4.C	5.A	6.D
7.A	8.C	9.C	10.A	11.C
12.A	13.E	14.D	--	---

5. Parathyroid Gland

1. A 50 year old man undergoes a total thyroidectomy for a follicular neoplasm. Within a day following surgery, he is noted to have tingling sensations and neuromuscular irritability. Which of the following serum laboratory tests should be ordered immediately to determine further therapy for this man?
- PTH
 - Calcitonin
 - Calcium
 - Thyroxine
 - TSH

2. Which of the following is true regarding multiple endocrine neoplasia 1 (MEN 1) syndrome?
- Virtually all patients develop medullary carcinoma thyroid
 - The genetic abnormality involves the RET gene
 - The genetic abnormality involves
 - Many patients develop parathyroid hyperplasia
 - Some patients may have a Marfanoid habitus

3. The following are the causes of osteoporosis except:
- Calcium intake
 - Increased PTH
 - Decreased Vitamin D level
 - Decreased physical activity
 - Decreased BMR

4. A middle aged man is found to be hypercalcemic on routine tests (Ca 2.8). His serum PTH is just above the normal range. His mother also has high calcium, but has never had surgery. The most appropriate initial investigation is:
- Parathyroid scan
 - US neck
 - 24 hour urine calcium
 - DNA studies
 - Thyroid function tests

5. Osteomalacia and kidney stones are characteristically associated with:
- Gigantism
 - Pheochromocytoma
 - Acromegaly
 - Hyperparathyroidism
 - Inappropriate ADH secretion

1.C	2.D	3.E	4.	5.D
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HINTS AND EXPLANATION

1. PITUITARY GLAND

1. Bronchogenic carcinoma (most commonly small cell lung cancer) is associated with paraneoplastic syndromes, like syndrome of inappropriate ADH secretion (SIADH) and humoral hypercalcemia. The scenario in this case is best explained by SIADH.
2. Hypothalamus secretes releasing factors (like CRH) and that act on pituitary to stimulate the release of hormones (like ACTH), Corticotropin releasing hormone CRH = ACTH TRH = TSH GnRH = LH/FSH GHRH = GH but whenever hypothalamus secretes dopamine it binds to D 2 receptors on pituitary gland and inhibits the lactotrophs thus inhibiting the production of prolactin. (Thus Destruction of hypothalamus results in fall of every pituitary hormone but not prolactin because it is under inhibitory control from hypothalamus).
4. Growth hormone excess in adults causes acromegaly, that results in enlarged jaw and coarse facial features (because of enlargement of nose and frontal bones).

THYROID DISORDERS

1. Whenever there is a suspected case of thyroid, serum TSH testing is the most sensitive because TSH gets abnormal before fluctuations in T4, T3 level and that makes it more preferable for diagnosis.
4. The weight loss and heat intolerance as evidence of increased metabolism, that is suggestive of hyperthyroidism, particularly primary hyperthyroidism, in which TSH is low.
5. In hashimoto's thyroiditis (autoimmune) there is infiltration of thyroid gland with B & T lymphocytes so there is increased risk for non-hodgkin B cell lymphoma.

6. In papillary carcinoma there are EMPTY-APPEARING NUCLEI, nuclei has no nuclear material inside them. (just like a cartoon called ANNIE who's eyes were drawn as white circles).
8. In primary hypothyroidism there is failure of gland function (due to disease or iodine deficiency) so despite High TSH, thyroid gland fails to respond and the level of T3, T4 remains low.
11. In thyrotoxicosis there is catecholamine surge and increased T3, T4 level (as thyrotoxicosis is a case of hyperthyroidism where TSH is low), the symptoms are due to both catecholamines and thyroid hormones.
12. Subacute granulomatous thyroiditis occurs in young women after upper respiratory tract infection, where the thyroid gland is tender and enlarged. Moreover the elevated ESR also confirms the origin.
13. As weight loss with increased appetite, exophthalmos, tachycardia, warmth all point towards increased metabolism that is suggestive of hyperthyroidism. And in hyperthyroidism the T3, T4 are high despite low TSH levels.
14. The mother has deficiency of thyroid hormone that ended in the child having abnormal bone growth and delayed CNS maturation (cretinism).

3. PANCREAS

1. Normally small fraction of hemoglobin is glycated i.e HBA1c (less than 5.7%). But as the blood glucose level rises above normal the level of HBA1C rise in accordance. Pre diabetic; 5.7 to 6.4% Diabetes >= 6.5%
2. Firstly the fasting blood glucose is 142 mg/dl, that is suggestive of hyperglycemia. Secondly POLYURIA (due to osmotic diuresis from glucose) and POLYDIPSIA (thirst to replace that lost fluid), these 02 are the classic symptoms of hyperglycemia, that occurs in

diabetes mellitus.

3. In this obese, diabetic patient whose lipid profile is high the reason behind the rise in triglyceroids and LDL (low density lipoprotein) is that insulin deficiency or resistance downregulates lipoprotein lipase (that removes fats from circulation) and that ends up in lipemia.
4. Clinical feature of Diabetes mellitus are polydipsia, polyurea, polyphagia and delayed wound healing as a long term complications. But hyperglycemia doesn't effect size / count of RBCs so it doesn't cause anemia.
7. Hyperglycemia results in, Advanced glycation end proteins, AGE, that combines with LDL, that deposits in large vessels and can cause several cardiovascular diseases like atherosclerosis, coronary artery disease, stroke or peripheral vascular disease.
8. The main pathophysiology in Type 1 diabetes is autoimmune destruction of beta cells that results in loss of insulin. So the level of insulin is always low in type 1.
15. Zollinger ellison syndrome is a disease in which tumor secretes gastrin that cause stomach to release a lot of acid that results in ulcers.

4. ADRENAL GLAND

1. Essential note; The excess of cortisol results in set of CLINICAL FEATURES called as CUSHING'S SYNDROME, it's most common cause is corticosteroid medications (that are often given for inflammatory conditions). Cushing's disease; pituitary ACTH-secreting tumor (that ends in excess cortisol), and it is one cause of Cushing syndrome.
4. In Addison's disease there is failure of adrenal gland so Cortisol and aldosterone will be less and in response pituitary will react to the low cortisol by increasing ACTH. As there is failure of adrenal gland so it is primary adrenal insufficiency.

- Secondary adrenal insufficiency is when pituitary glands fails to secrete ACTH.
5. Pheochromocytoma is a catecholamine secreting tumor that clinically presents as HYPERTENSION, headache, palpitation, sweating and pallor.
 7. In Cushing syndrome there is excess glucocorticoid, cortisol, that results in hypertension, HYPERGLYCEMIA, DIABETES (from insulin resistance) and immune suppression (risk of infections especially opportunistic).
 14. GRAVE'S disease is number one cause of HYPERTHYROIDISM. Features of which are RAPID metabolism, heat intolerance, diarrhea, TACHYCARDIA.

5. PARATHYROID GLAND

2. MEN, multiple endocrine neoplasia. MEN 1, 3 P's, Pituitary adenoma, Parathyroid adenoma, Pancreatic tumors.
5. Hyperparathyroidism, 03 types. PRIMARY (reason= overactive glands), inappropriate secretion of PTH, commonly due to parathyroid adenoma. It causes hypercalcemia and phosphaturia. Results in kidney stones, bone pain, abdominal pain, psychiatric overtones. SECONDARY (due to hypocalcemia) TERTIARY (seen in renal failure)

THE END

CNS PATHOLOGY

1. A 4 year old boy presented with posterior fossa tumor. Biopsy reveals sheets of small blue round cells with hyperchromatic nuclei. What is your most likely diagnosis?

- Astrocytoma
- Ependymoma
- Medulloblastoma
- Meningioma
- Oligodendroglioma

2. Which of the following is immune mediated peripheral neuropathy?

- Alzheimer disease
- Leprosy
- Guillain barre's syndrome
- Diphtheria
- Hereditary motor and sensory neuropathy

3. A 38 year old woman presents with increasing frequency of severe headaches. The previous day she had a seizure that lasted several minutes. Her past medical history is otherwise unremarkable and she has no previous history of seizure activity. She is admitted to the hospital and a CT scan of her head finds a 2cm mass attached to the dura in her right frontal area. Which of the following histologic changes is most likely to be seen in a biopsy specimen taken from this tumor?

- Antoni A areas with verocay bodies
- A whorled pattern with psammoma bodies
- Endothelial proliferation with serpentine areas of necrosis
- "Fried egg" appearance of tumor cells without necrosis
- True rosettes and pseudorosettes

4. The following lab findings are correct in acute pyogenic meningitis EXCEPT:

- CSF colour – usually turbid
- CSF pressure – increased
- Leukocyte count – high
- CSF protein – elevated
- CSF glucose – elevated

5. Which of the following is not a tumor of central nervous system?

- Astrocytoma
- Oligodendroglioma
- Meningioma
- Ependymoma
- Retinoblastoma

6. A 15 year old boy with no sexual maturation is found to have papilledema an enlarged sella and fine calcifications above the sella on skull x-ray. The most likely diagnosis is:

- Meningioma
- Adenoma of pituitary
- Cystic astrocytoma
- Cranulopharyngioma
- Tuberculosis meningitis

7. Receptors lost in myasthenia gravis are:

- Acetylcholine receptors
- Nicotinic receptors
- Serotonin receptors
- Dopamine receptors
- Histamine receptors

8. Which of the following responses is false regarding medulloblastoma?

- Predominantly occurs in childhood
- Occurs in cerebrum
- Has a desmoplastic variant
- Is highly malignant
- Is radioactive

9. A tumor was found to be attached to dural membrane during surgery. Its histopathologic examination shows that it is composed of elongated cells with scattered psammoma bodies. What is the most likely diagnosis in this case?

- Astrocytoma
- Medulloblastoma
- Meningioma
- Ependymoma
- Pilocytic astrocytoma

10. Laboratory examination of a CSF obtained from a child of 2 years age, who presented with fever, headache, vomiting and neck rigidity is suggestive of acute pyogenic meningitis. The most likely etiological agent of this condition is:

- Escherichia coli
- Group B streptococci
- Staphylococcus aureus
- Hemophilus influenza
- Streptococcus pneumonia

11. Which of the following is truly a characteristic of meningioma?

- Intracerebral tumor
- Tumor cells arranged in a rosette pattern
- Origin of tumor cells in arachnoid matter
- Fried egg appearance of tumor cells
- Multiple areas of necrosis and hemorrhages in the tumor

12. Which of the following is a diagnostic feature of acute pyogenic meningitis?

- Decrease in CSF protein
- Increase in CSF glucose
- Clear transparent CSF
- Presence of increased number of lymphocytes in CSF
- Presence of gram negative cocci on gram negative smear of CSF

13. Which of the following carries a very poor prognosis?

- Ependymoma
- Glioblastoma multiforme

- Meningioma
- Shwannoma
- Oligodendroglioma

14. An elderly man presents with loss of memory for recent events. He frequently forgets names of his spouse and grandchildren. He often loses his way driving to familiar locations. Which of the following is he most probably suffering from?

- Parkinson's disease
- Transient ischemic attacks
- Alzheimer disease
- Slow viral infection, kuru
- Multiple sclerosis

15. A 27 year old man had a fall while working high up on a wall and strikes the left side of his head against a concrete ground. On physical examination only a minor scalp abrasion is present on the site of impact. There was slight bleeding that stopped in minutes. He was initially alert following the accident. After half an hour became unconscious. A head CT scan revealed a convex, lens shaped area of hemorrhage centered over the left parietal region. These events were most likely to be associated with damage to which of the following parts of intracranial vasculature:

- Bridging veins
- Cavernous sinus
- Inferior cerebellar artery
- Middle meningeal artery
- Ophthalmic branch of external carotid artery

16. A 22 year old G2 P1 woman has had an uncomplicated pregnancy. A screening ultrasound is performed at 17 weeks gestation. Maternal serum alpha-fetoprotein test was performed which was elevated. Which of the following abnormalities of CNS is most likely to be present in this fetus?

- Holoprosencephaly
- Holoprosencephaly
- Encephalocele
- Germinal matrix hemorrhage
- Spina bifida occulta

17. There was severe head trauma incurred in a motorcycle accident. A 20-year-old woman was noted to have decerebrate posturing. Fundoscopic examination revealed marked bilateral papilloedema. A CT scan of the head revealed marked diffuse cerebral edema from an increase in sodium and water content. There is effacement of lateral ventricles. This edema was most likely to be severest in which of the following parts of the brain?

- a. Gray matter
- b. Meninges
- c. White matter
- d. Dura
- e. Ependyma

18. CNS tumor that occurs primarily in children and exclusively in cerebellum:

- a. Astrocytoma
- b. CNS lymphoma
- c. Ependymoma
- d. Medulloblastoma
- e. Meningioma

19. A 2-year-old child presents with fever, headache, prostration and nuchal rigidity. The cerebrospinal fluid is cloudy and microscopic examination reveals innumerable neutrophils. The CSF protein is increased and glucose is decreased. The most likely etiological agent is:

- a. Escherichia coli
- b. Hemophilus influenza
- c. Group B streptococci
- d. Streptococcus pneumoniae
- e. Staphylococcus aureus

20. Which tumor is common in children?

- a. Astrocytoma
- b. Oligodendroglioma
- c. Ependymoma
- d. Medulloblastoma
- e. Meningioma

21. Which type of brain herniation is life threatening?

- a. Subfalcine herniation
- b. Transtentorial herniation
- c. Tonsillar herniation

d. All of above

e. None

1.C	2.C	3.B	4.E	5.E
6.D	7.A	8.B	9.C	10.E
11.C	12.E	13.B	14.C	15.D
16.C	17.C	18.D	19.D	20.D

21.C

THE END