1. At the end of the 4th week, closure of the ventral body wall is complete except in the region of:
   a) heart
   b) oropharyngeal membrane
   c) allantois
   d) connecting stalk
   e) head

2. Abnormal body wall closure in the pelvic region results in:
   a) ectopia cordis
   b) bladder and cloacal dystrophy
   c) physiological umbilical hernia
   d) pathological umbilical hernia
   e) septum transversum

3. Blood islands that appear bilaterally, parallel and close to the midline of the embryonic shield form:
   a) endocardium
   b) myocardium
   c) dorsal aortae
   d) venae cavae
   e) coronary capillaries

4. When aortic lumen is significantly narrowed below the origin of the left subclavian artery, this is:
   a) tetralogy of Fallot
   b) patent ductus arteriosus
   c) coarctation of aorta
   d) ectopia cordis
   e) aortic valvular stenosis

5. Respiratory diverticulum (lung bud) appears as an outgrowth from the:
   a) ventral wall of the foregut
   b) dorsal wall of the foregut
   c) ventral wall of the midgut
   d) dorsal wall of the midgut
   e) ventral wall of the hindgut

6. When duodenum is surrounded by pancreatic tissue, this is called:
   a) accessory pancreatic tissue
   b) annular pancreas
   c) atretic pancreas
   d) intrahepatic pancreas
   e) hypoplasia of the pancreas
7. Urorectal septum separates the region between:
   a) foregut and midgut
   b) midgut and hindgut
   c) allantois and hindgut
   d) allantois and midgut
   e) hindgut and fistula

8. During development of kidney, under the inductive influence of the tubule, cells of the metanephric tissue cap form:
   a) renal pelvis
   b) renal calyces
   c) ureters
   d) renal vesicles
   e) neurotrophic urinary tubules

9. Cancer of the kidneys that usually affects children by 5 years of age is:
   a) Denys-Drash tumor
   b) Multicystic tumor
   c) Potter tumor
   d) Renosarcoma
   e) Wilms’ tumor

10. During development of vagina, sinovaginal bulbs proliferate and form a solid:
    a) vaginal fold
    b) vaginal tube
    c) vaginal cloaca
    d) vaginal plate
    e) vaginal sinus

11. If the genital tubercle splits, what may occur?
    a) micropenis
    b) epispadias
    c) hipospadias
    d) macropenis
    e) bifid penis

12. Meckel’s cartilage forms:
    a) stapes
    b) incus and malleus
    c) hyoid arch
    d) trigeminal arch
    e) larynx
13. When the tongue is not freed from the floor of the mouth, this is:
   a) thyroglossal cyst
   b) midline tongue coarctation
   c) ankyloglossia
   d) glossal fistula
   e) Wilms’ prominence

14. During the sixth week of development, semicircular canals appear as:
   a) two perilymphatic spaces
   b) two ridges
   c) flattened outpocketings of the utricular part of the otic vesicles
   d) five crura
   e) the lateral wall of the cochlear duct

15) What is true for congenital deafness:
   a) it may be caused by abnormal development of external ear
   b) in the most extreme cases, tympanic cavity and external meatus are present
   c) most forms of congenital deafness are caused by environmental factors
   d) rubella virus, affecting the fetus in the 28\textsuperscript{th} week may cause it frequently
   e) it has been suggested that diabetes can cause congenital deafness

16. During eye development, the lips of the choroid fissure fuse and the mouth of the optic cup becomes the future:
   a) iris
   b) cornea
   c) retina
   d) pupil
   e) vitreous body

17. What is true for muscular arteries?
   a) they cannot control blood flow
   b) their intima has a very thick subendothelial layer
   c) the internal elastic lamina is not present
   d) the tunica media may contain 1-2 layers of smooth muscle cells
   e) vasa vasorum are found in the adventitia

18. What is NOT true for valves in veins:
   a) most veins have valves
   b) valves are most prominent in large veins
   c) valves consist of four pairs of semilunar folds
   d) semilunar folds project across part of the lumen
   e) they are rich in elastic fibers
19. What is NOT true for platelets (thrombocytes)?
a) they are nonnucleated, disklike clee fragments  
b) platelets promote blood clotting  
c) normal platelet counts range from 2 to 4 millions per microliter of blood  
d) platelets have a life span of about 10 days  
e) in stained blood smears, platelets often appear in clumps

20. Malignant clones of leukocyte precursors are:
a) leukemias  
b) thrombus  
c) clots  
d) lymphomas  
e) aspirations

21. Which cells are included in the innate immune responses:
a) neutrophils  
b) macrophages  
c) mast cells  
d) natural killer cells  
e) all of the above

22. What is true for thymus:
a) thymus is a unilateral organ located in the mediastinum  
b) it attains its peak development during old age  
c) like bone marrow, it is considered a secondary lymphoid organ  
d) thymus has a capsule made of epithelial tissue  
e) none of the above

23. Unique protein that can be found in enamel is:
a) integrin  
b) neurotrophin  
c) amelogenin  
d) ameloblastin  
e) prismin

24. Colonocytes are located in:
a) mouth  
b) enamel  
c) esophagus  
d) small intestine  
e) large intestine
25. The exocrine portion of the pancreas is similar in structure to the:
a) parotid gland
b) submandibular gland
c) sublingual gland
d) liver
e) pancreatic islets

26. What is NOT true for liver regeneration:
a) liver has a strong capacity for regeneration
b) liver has slow rate of cell renewal
c) the loss of hepatic tissue triggers a mechanism by which healthy hepatocytes begin to divide
d) hyperplasia continues until the original mass of tissue is doubled
e) the regenerated liver tissue is usually well organized

27. A specialized olfactory epithelium is located in:
a) superior conchae
b) inferior conchae
c) middle conchae
d) nares
e) vibrissae

28. Dust cells are:
a) alveolar macrophages
b) type I alveolar cells
c) type II alveolar cells
d) Clara cells
e) pneumocytes

29. Juxtaglomerular granular cells in kidneys release:
a) angiotensinogen
b) angiotensin
c) renin
d) aldosterone
e) plasmin

30. What is NOT true for urinary bladder?
a) the bladder is a muscular sac
b) the bladder is expandable as it fills with urine
c) the bladder expands primarily upward
d) the bladder becomes more oval in shape as it fills with urine
e) the bladder in an average adults can hold 800-12000 mL of urine, with the urge to empty appearing at a volume of 400-600 mL
31. F or PP cells can be found in:
   a) pancreas
   b) thyroid gland
   c) parathyroid gland
   d) adrenal gland
   e) pituitary gland

32. What is NOT true for parathyroid glands:
   a) they are four small oval masses
   b) each parathyroid gland is contained within a capsule
   c) capsule of the gland sends septa into the gland
   d) two types of cells are present: chief and principal cells
   e) chief cells are small polygonal cells

33. The rete testis drains into:
   a) efferent ductules
   b) epididymis
   c) ductus deferens
   d) urethra
   e) none of the above

34. What is true for ductus deferens:
   a) it is a short straight tube
   b) it has a thin muscular wall
   c) it is characterized by narrow lumen
   d) its mucosa is not folded
   e) its mucosa is lined by columnar ciliated epithelium

35. Corpus luteum is located in:
   a) ovarian cortex
   b) ovarian medulla
   c) ovarian surface epithelium
   d) ampulla of Fallopian tubes
   e) cumulus oophorus

36. When breastfeeding is stopped, most alveoli that developed secretory properties during pregnancy:
   a) proliferate
   b) degenerate
   c) move deeper into the gland
   d) move towards the surface of the gland
   e) become inactive, but do not change in any way
37. Surrounding the fovea centralis is the:
   a) macula lutea
   b) macula minor
   c) macula centralis
   d) macula amacrinal
   e) macula Muller

38. The vitreous body occupies the vitreous chamber behind the:
   a) cornea
   b) pupil
   c) Bruch’s layer
   d) ganglion cells
   e) lens

39. The hair cells of the cristae ampullaris detect:
   a) linear acceleration
   b) gravity
   c) tilt of the head
   d) rotational or angular movements of the head
   e) vertical tilt of the head

40) What is NOT true for vestibular maculae and their cells:
   a) two sensory areas, the maculae, are located in the epithelial walls of the utricule and saccule
   b) both maculae are similar histologically
   c) both maculae contain mechanoreceptor cells called hair cells
   d) hair cells use gravity and endolymph movement to detect the orientation of the stationary head
   e) macular wall is composed of hair cells, supporting cells and endings of the cochlear branch of the
eight cranial nerve