1) Minor structural abnormalities in tissue sections are called:
   a) ECM
   b) embeddings
   c) fixations
   d) artifacts
   e) serial sections

2) What are the names of freezing techniques that can be combined with electron microscopy?
   a) freeze fracture
   b) cryofracture
   c) freeze etched
   d) none of the above
   e) A+B+C

3) When receptors are on cells very close to the hormone-secreting cells, this type of secretion is:
   a) autocrine
   b) paracrine
   c) holocrine
   d) merocrine
   e) eccrine

4) Stratified columnar epithelium can be found in:
   a) epidermis
   b) conjunctiva
   c) urinary bladder
   d) sweat glands
   e) salivary glands

5) Elastin contains two unusual amino acids:
   a) elastase and desmoelastase
   b) desmosine and isodesmosine
   c) proline and lysine
   d) hydroxyproline and hydroxylysine
   e) elastase and proline

6) Deficiency of collagen type III, characterized by ruptures in arteries and the intestine is:
   a) Marfan’s syndrome
   b) Ehlers-Danlos type IV disease
   c) Scurvy
   d) Ostogenesis imperfect
   e) Arteriosis imperfect

7) Undifferentiated mesenchymal cells that differentiate as preadipocytes are transformed into:
   a) fibroblasts
   b) chondroblasts
   c) lipoblasts
   d) osteoblasts
   e) macrophages
8) ECM area immediately surrounding each chondrocyte is:
   a) chondronectin  
   b) lacuna  
   c) territorial matrix  
   d) interterritorial matrix  
   e) perichondrium

9) Disease in which bone mineralization is impaired is called:
   a) osteitis fibrosa cystica  
   b) osteogenesis imperfect  
   c) Marfan syndrome  
   d) Ehlers-Danlos syndrome  
   e) osteomalacia

10) The bone collar is produced during ossification in:
    a) epiphysis  
    b) epiphyseal plate  
    c) Howship’s lacuna  
    d) diaphysis  
    e) external circumferential lamella

11) After the cut or injury of peripheral nerves, the newly growing axons may form a:
    a) Schwannoma  
    b) gapoma  
    c) nervoma  
    d) neuroma  
    e) growoma

12) Neural plasticity is controlled by growth factors called:
    a) neuroma  
    b) neurophins  
    c) gliotrophins  
    d) neurotrophins  
    e) acetylcholins

13) The source of regenerating cells in skeletal muscle are:
    a) sarcomeras  
    b) T-tubules  
    d) isomeras  
    e) myocytes  
    d) satellite cells

14) Smooth muscle in which only a few cells are innervated is called:
    a) striated smooth muscle  
    b) multiunit smooth muscle  
    c) unitary smooth muscle  
    d) non-innervated smooth muscle  
    e) oligoinnervated smooth muscle
15) Disappearance of melanocytes in the skin causes disorder:
   a) melanoma
   b) melanoblastic disorder
   c) vitiligo
   d) fibroma
   e) melygo

16) Epithelial tactile cells are commonly called:
   a) Schwann cells
   b) Rufini cells
   c) Pacini cells
   d) Merkel cells
   e) Gauck cells

17) What is true for meiosis?
   a) meiosis takes place in the somatic cells
   b) during meiosis number of chromosomes is reduced to 22
   c) homologus chromosomes align in groups of 4 during meiosis I
   d) each gamete contains 46 chromosomes
   e) at the beginning of meiosis I male and female germ cells replicate their DNA

18) Sometimes chromosomes break, and pieces of one chromosome attach to another. This is called:
   a) translocation
   b) mosaicism
   c) nondisjunction
   d) Barr process
   e) cleft

19) Infertility is a problem for:
   a) 1% of couples
   b) 2% of couples
   c) 5% of couples
   d) 10% of couples
   e) 15% to 30% of couples

20) Cortical and zona reactions prevent:
   a) formation of cumulus oophorus
   b) polyspermy
   c) chemotaxia
   d) metabolic activation of the egg
   e) capacitation

21) Sometimes blastocyst develops in the ovary proper, causing a:
   a) rectouterine cavity
   b) pouch of Douglas
   c) primary ovarian pregnancy
   d) hidatiform mole
   e) omentum pregnancy
22) Secondary yolk sac is also called a:
   a) connecting stalk
   b) primitive yolk sac
   c) original exocoelomic cavity
   d) definitive yolk sac
   e) umbilical cord

23) Sometimes remnants of the primitive streak may proliferate and form tumors known as:
   a) primitivomas
   b) sacrococcygeal teratomas
   c) yolk sac tumors
   d) gastrulomas
   e) glabromas

24) By the end of the third week of development, the villus is now known as:
   a) primary villus
   b) secondary villus
   c) tertiary villus
   d) primordial villus
   e) Graafian villus

25) What is NOT true for capillary hemangiomas:
   a) They are abnormally dense collections of capillary blood vessels
   b) They form the most common tumors of infancy
   c) They occur in approximately 10% of all births
   d) They may occur only in craniofacial structures
   e) Facial lesions may be focal or diffuse

26) Intermediate mesoderm temporarily connects paraxial mesoderm with:
   a) endoderm
   b) ectoderm
   c) epiblast
   d) lateral plate
   e) neurotrophin

27) A condition characterized by maternal hypertension, proteinuria and edema is called:
   a) abortus inminens
   b) preeclampsia
   c) hydrops fetus
   d) omphalocela
   e) gestational diabetes

28) At the time of birth, the weight of a normal fetus is:
   a) 2,000 to 2,400 g
   b) 2,500 to 2,900 g
   c) 3,000 to 3,400 g
   d) 3,500 to 3,900 g
   e) 4,000 to 4,400 g
29) Folate supplementation lowers the incidence of:
   a) cretinism
   b) oligohydramnion
   c) neural tube defects
   d) hemangiomas
   e) premature birth

30) Disturbances in carbohydrate metabolism during pregnancy in diabetic mothers may cause:
   a) still births
   b) neonatal deaths
   c) abnormally large infants
   d) congenital malformations
   e) all of the above

31) What is true for amniocentesis?
   a) a needle is inserted transvaginally
   b) approximately 10 microliters of fluid is withdrawn
   c) the procedure may be performed before 5th week of gestation
   d) the risk of fetal loss as a result of the procedure is 0.006%
   e) needle location is identified by ultrasound

32) What is formed when cell death in the apical ectodermal ridge (AER) separates this ridge?
   a) lateral plates
   b) primary centers of ossification
   c) toes and fingers
   d) forehead
   e) cleft lip

33) Partial absence of one or more of the extremities is called:
   a) amelia
   b) meromelia
   c) micromelia
   d) minimelia
   e) nanomelia

34) Atrophy of abdominal wall musculature causes:
   a) Duchenne dystrophy
   b) Poland sequence
   c) prune belly syndrome
   d) arthrogryposis
   e) musculopetrosis

35) A well-defined border between each somite and the parietal layer of lateral plate mesoderm is called:
   a) lateral somitic frontier
   b) medial somitic frontier
   c) sagittal somitic frontier
   d) frontal somitic frontier
   e) primaxial somitic frontier
36) Excessive hairiness is called:
   a) ichthyosis
   b) atrichosis
   c) hypertrichosis
   d) dermatoglyphs
   e) hair shaft

37) During the third and fourth months, the corium forms many irregular papillary structures called:
   a) dermal papillae
   b) epidermal papillae
   c) papillomas
   d) lacunar papillae
   e) trichopapillae