

## **ANSWERS**

### **2.17 Histology Drawings**

627. Pseudostratified epithelium
- (a) cilia
  - (b) mucoid droplets of goblet cell
  - (c) epithelial cell
  - (d) basal lamina
  - (e) blood capillary
628. Intramembranous ossification
- (a) osteocyte
  - (b) cement line
  - (c) osteoblasts
  - (d) bone matrix
  - (e) osteoclast
629. Secondary bone: Haversian system
- (a) bone canaliculi
  - (b) cement line
  - (c) Haversian canal
  - (d) osteocyte
  - (e) bone lamella
630. Synovial joint (diarthrosis)
- (a) periosteum
  - (b) synovial fluid
  - (c) synovial membrane
  - (d) ligament ( fibrous capsule)
  - (e) articular cartilage
631. Epiphyseal plate of developing long bone
- (a) zone of resting cartilage
  - (b) zone of proliferating cartilage
  - (c) zone of hypertrophic cartilage
  - (d) zone of calcified cartilage
  - (e) zone of ossification (primary spongiosa)
632. Ultrastructure of skeletal muscle-myofibrillar banding
- (a) sarcomere
  - (b) H-band
  - (c) I-band (actin)
  - (d) A-band (myosin and area of overlap with actin)
  - (e) Z-line

633. Isolated (teased) peripheral nerve fiber
- (a) endoneurium
  - (b) axon
  - (c) node of Ranvier
  - (d) nucleus of Schwann cell
  - (e) Schmit-Lantermann cleft (incisure) in myelin sheath
634. Motor end plate
- (a) nucleus of muscle fiber
  - (b) axon of myelinated nerve
  - (c) synaptic vesicles of pre-synaptic area
  - (d) endomysium
  - (e) post-synaptic junctional folds
635. T.S. spinal cord
- (a) posterior median septum
  - (b) posterior (gray) horn
  - (c) central (ependymal) canal
  - (d) motor neurons of anterior (gray) horn
  - (e) anterior median sulcus
636. Cerebellar cortex
- (a) pia mater
  - (b) molecular layer (stellate cells)
  - (c) purkinje cells
  - (d) granular layer
  - (e) white matter (myelinated fibers)
637. Choroid plexus (ultrastructure)
- (a) microvilli with large or expanded tips
  - (b) lateral infoldings of plasma membrane
  - (c) basal lamina
  - (d) basal invaginations of plasma membrane
  - (e) fenestrated blood capillary
638. Wall of small muscular artery
- (a) tunica intima
  - (b) tunica media
  - (c) tunica adventitia
  - (d) internal elastic limiting membrane
  - (e) vasa vasorum of the adventitial layer

639. Thick skin
- (a) Cornified (keratinized) layer (stratum corneum)
  - (b) Clear layer (stratum lucidum)
  - (c) granular layer (stratum granulosum)
  - (d) spiny layer (stratum spinosum)
  - (e) basal layer (stratum basalis)
640. Hair
- (a) dermal connective tissue sheath
  - (b) external epithelial (root) sheath
  - (c) papilla
  - (d) arrector pili muscle
  - (e) sebaceous gland
641. Vertical section through fingernail
- (a) eponychium
  - (b) nail plate
  - (c) hyponychium
  - (d) nail matrix (area of much cell division)
  - (e) nail bed
642. Lymph node
- (a) trabecula
  - (b) lymphatic node
  - (c) afferent lymphatic vessel
  - (d) subcapsular sinus
  - (e) efferent lymphatic vessel in area of hilus
643. Circumvallate papilla of tongue
- (a) stratified squamous epithelium
  - (b) circular groove or furrow
  - (c) taste bud
  - (d) lamina propria
  - (e) glands of von Ebner
644. Developing tooth
- (a) enamel organ (enamel pulp)
  - (b) developing dentin
  - (c) dental papilla (future pulp)
  - (d) dental lamina
  - (e) bud of permanent tooth

645. Adult tooth
- (a) enamel
  - (b) dentin
  - (c) pulp cavity
  - (d) cementum
  - (e) periodontal ligament
646. Mixed salivary gland
- (a) myoepithelial cell
  - (b) striated duct
  - (c) intercalated duct
  - (d) mucous cells
  - (e) serous cells in demi-lune
647. Fundus of stomach
- (a) lining of mucous cells
  - (b) gastric pit
  - (c) lamina propria
  - (d) parietal cell
  - (e) zymogen cell
648. Liver organization
- (a) acinus
  - (b) classical lobule
  - (c) central vein
  - (d) portal area
  - (e) portal lobule
649. Hepatocyte (ultrastructure)
- (a) sinusoid
  - (b) space of Disse
  - (c) glycogen
  - (d) bile canaliculus
  - (e) Kupffer cell
650. Olfactory epithelium
- (a) olfactory vesicle
  - (b) supporting (sustentacular) cell
  - (c) olfactory cell
  - (d) basal cell
  - (e) gland of Bowman

651. Larynx (vertical section)
- (a) false vocal cord
  - (b) laryngeal ventricle
  - (c) thyroid cartilage
  - (d) vocal ligament (of true vocal cord)
  - (e) vocal muscle
652. Kidney (vertical slice)
- (a) renal column (of Bertin)
  - (b) medullary ray
  - (c) pyramid
  - (d) renal pelvis
  - (e) ureter
653. Nephron
- (a) renal corpuscle (glomerulus, Bowman's capsule)
  - (b) proximal convoluted tubule
  - (c) loop of Henle
  - (d) distal convoluted tubule
  - (e) collecting tubule
654. Hypophysis
- (a) ventral III of brain
  - (b) pars tuberalis
  - (c) pars nervosa ('posterior' lobe)
  - (d) pars intermedia
  - (e) pars distalis: ('anterior' lobe)
655. Adrenal gland
- (a) capsule
  - (b) zona glomerulosa
  - (c) zona fasciculata
  - (d) zona reticularis
  - (e) ganglion cell of medulla
656. Testis
- (a) Seminiferous tubule
  - (b) efferent ductules (ductuli efferentes)
  - (c) vas (ductus) deferens
  - (d) epididymal duct (corpus of epididymis)
  - (e) rete testis

657. T.S. penis
- (a) skin
  - (b) medial septum
  - (c) corpus cavernosum (paired erectile bodies)
  - (d) tunica albuginea
  - (e) urethra (passing through the corpus spongiosum)
658. Spermatozoon
- (a) acrosome
  - (b) nucleus
  - (c) middle piece with mitochondria
  - (d) principal (main) piece
  - (e) end piece
659. Ovary
- (a) primordial follicle
  - (b) primary (unilaminar) follicle
  - (c) primary (multilaminar) follicle
  - (d) surface epithelium (modified mesothelium). A thin tunica albuginea is present beneath this epithelium
  - (e) corpus luteum
660. Graafian follicle
- (a) theca externa
  - (b) theca interna
  - (c) membrane granulosa
  - (d) liquor folliculi
  - (e) corona radiata
661. Placenta
- (a) chorionic plate (fetal)
  - (b) floating villus
  - (c) intervillous space (maternal blood)
  - (d) anchoring villus
  - (e) basal plate (maternal blood)
662. Umbilical cord
- (a) umbilical artery
  - (b) umbilical artery
  - (c) amnion (simple epithelium)
  - (d) Wharton's jelly (mucous connective tissue)
  - (e) umbilical vein

663. Anterior eye
- (a) cornea
  - (b) anterior chamber
  - (c) iris
  - (d) crystalline lens
  - (e) posterior chamber
664. Cornea
- (a) stratified squamous epithelium
  - (b) Bowman's membrane
  - (c) stroma (substantia propria)
  - (d) Descemet's membrane
  - (e) corneal epithelium
665. Posterior eye
- (a) sclera
  - (b) choroid
  - (c) photosensitive retina
  - (d) fovea centralis (macula lutea)
  - (e) blind spot
666. Photosensitive retina
- (a) pigment 'epithelium'
  - (b) layer of rods and cones (photoreceptor cells)
  - (c) inner nuclear layer (bipolar neurons)
  - (d) inner plexiform layer
  - (e) layer of ganglion cells
667. Rod photoreceptor
- (a) outer segment (with disk)
  - (b) connecting segment
  - (c) ellipsoid of inner segment
  - (d) myoid of inner segment
  - (e) synaptic bulb
668. Eyelid
- (a) orbicularis oculi muscle
  - (b) palpebral conjunctiva
  - (c) tarsal plate
  - (d) Meibomian glands
  - (e) glands of Moll (associated with the eyelashes)

669. Cochlea
- (a) Reissner's membrane
  - (b) stria vascularis
  - (c) scala media
  - (d) spiral ganglion
  - (e) scala tympani
670. Organ of Corti
- (a) outer hair cell
  - (b) tectorial membrane
  - (c) inner hair cell
  - (d) tunnel of Corti
  - (e) basilar membrane