



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

**UNIVERSITY SPECIAL / SUPPLEMENTARY EXAMINATIONS
2021 / 2022 ACADEMIC YEAR**

**FIFTH YEAR SECOND SEMESTER
SPECIAL/SUPPLEMENTARY EXAMINATIONS**

**FOR THE DEGREE
OF
BACHELOR OF SCIENCE IN ELECTRICAL AND
COMMUNICATION ENGINEERING, CIVIL AND STRUCTURAL
ENGINEERING AND MECHANICAL AND INDUSTRIAL
ENGINEERING**

**COURSE CODE: ECC 522
COURSE TITLE: E-COMMERCE**

DATE: Thursday, 6th, October, 2022 TIME: 12-2 pm

INSTRUCTIONS TO CANDIDATES

- i) Question ONE (1) is compulsory
- ii) Answer Any Other TWO (2) questions

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over.

QUESTIONS

QUESTION 1

- a) Outline FOUR issues that arise in electronic payments as a form of e-commerce (4 Marks)
- b) Explain at least TWO problems that are solved by the implementation of a good supply chain management system (4 Marks)
- c) Discuss what Electronic Data Interchange (EDI) entails (2 Marks)
- d) Explain THREE components of a call center (6 Marks)
- e) Explain FOUR disadvantages of ERP (8 Marks)
- f) Discuss THREE benefits of using Enterprise Resource Planning (ERP) (6 Marks)

QUESTION 2

- a) Discuss THREE advantages of e-marketing (6 Marks)
- b) Using examples, discuss THREE categories of e-commerce (6 Marks)
- c) Define the term e-marketing (2 Marks)
- d) Describe THREE features of supply chain management in e-commerce (6 Marks)

QUESTION 3

- a) Explain THREE advantages of using the internet (6 Marks)
- b) Describe the features of e-commerce (6 Marks)
- c) Integrity and security is a big concern in e-commerce because the transactions are done over the internet. Giving examples, discuss FOUR security requirements in electronic payment systems. (8 Marks)

QUESTION 4

- a) Explain THREE uses of the intranet (6 Marks)
- b) What is content marketing? (2 Marks)
- c) Explain THREE advantages of internet/e-commerce integrated supply chain (6 Marks)
- d) Define the term 'web traffic' (2 Marks)
- e) State FOUR advantages of e-commerce (4 Marks)

QUESTION 5

- a) List THREE properties of e-cash (3 Marks)
- b) Giving examples, state FOUR functional modules of Enterprise Resource Planning (ERP) (8 Marks)
- c) Outline FIVE security threats to e-commerce (5 Marks)
- d) Explain TWO applications of the EDI (4 Marks)

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MASINDE MULIRO UNIVERSITY
DEPARTMENT OF HUMAN ANATOMY
SCHOOL OF MEDICINE
END YEAR EXAMINATIONS FOR MBChB YEAR 1

Date: 7th October 2022

Time: 0800HRS-1200HRS

INSTRUCTIONS:

1. Write your University Registration Number on every Answer Booklet you use.
2. Do not write your name on any paper you use
3. The time allowed for this paper is THREE (3) hours.
4. The Questions are set out in FOUR (4) Sections, A, B, C and D.
5. Answer all questions (120 Marks total)
6. Read very carefully the additional instructions preceding each section.

SECTION A : MCQ (60 Marks)

EMBRYOLOGY:

1. Prior to fertilizing an egg, a sperm must:
 - A) Penetrate the corona radiata and zona pellucida.
 - B) Undergo a second meiotic division.
 - C) Undergo capacitation.
 - D) Secrete fluids that promote its motility.
 - E) Attain a diploid number of chromosomes.
2. Bleeding that may occur near the 13th day of development.
 - A) Represents a shedding of uterine tissue.
 - B) Is caused by increased blood flow into lacunar spaces.
 - C) Is not normal.
 - D) May be confused with normal menstrual bleeding.
 - E) Represents a spontaneous abortion.
3. Primordial germ cells migrate to the gonads from the:
 - A) Intermediate mesoderm
 - B) Wall of the yolk sac
 - C) Lateral plate mesoderm
 - D) Endoderm of the bilaminar disc
 - E) Splanchnic mesoderm.
4. Fertilization to implantation:
 - A) Morula is the immediate product of fertilization.
 - B) Implantation starts between the 8th & 10th day.
 - C) Initial penetration of the endometrium by the developing embryo is by the inner cell mass.
 - D) Implantation normally starts in the fallopian tube.
 - E) Fertilization occurs when the spermatozoon penetrates the zona pellucida but not the corona radiata.
5. In cell division:

- A) Meiosis normally results in 4 haploid daughter cells.
- B) haploid human cell contains 46 chromosomes in its nucleus.
- C) Meiosis is the method by which somatic cells multiply.
- D) Metaphase is the stage at which DNA and therefore chromosomes undergo duplication.
- E) Anaphase is the technical term for G₀ of the cell cycle.

6. Ovulation:

- A) Can occur at any stage of the maturation of the graafian follicle.
- B) Results in the release of the oocyte leaving behind a corpus luteum.
- C) The corpus luteum produces oestrogen and androgens.
- D) Ovulation is followed by the proliferative phase of the endometrium during the menstrual cycle.
- E) The oocyte gains entry into the oviduct via its isthmus.

7. The chorionic cavity:

- A) Is equivalent to the intraembryonic coelom
- B) Is lined by intraembryonic endoderm
- C) Is formed by a coalition of exocoelomic cysts
- D) Contains the free-floating foetus
- E) Communicates with the uterine endometrium via the chorionic plate.

8. During the 4th to the 8th week IUL:

- A) A portion of the ectoderm thickens and later forms the neurotube.
- B) The anterior neuropore closes 2-3 days after the posterior one has closed.
- C) Closure of the neural groove to form the neural tube starts in the lumbar region.
- D) The somite or intermediate mesoderm is formed.
- E) When closure of the posterior neuropore fails, anencephaly results.

9. The corpus Luteum of pregnancy starts degenerating by:

- A) 9th day of fertilization.
- B) 2 weeks after fertilization
- C) 2 months after fertilization.
- D) 3 to 4 months after fertilization.
- E) None of the above.

10. By the 12th day of development, the following take place except:

- A) The blastocyst is completely implanted.
- B) There is formation of lacunar
- C) Maternal capillaries get eroded.
- D) Decidual reaction
- E) Primary villi is formed.

11) The epithelium of the epididymis:

- a) Simple cuboidal
- b) Simple squamous
- c) Transitional
- d) Pseudo stratified columnar with stereocilia
- e) Pseudostratified columnar with microvilli

12) All of the following are part of junctional complex except:

- a) Gap junctions
- b) Zonula occludens
- c) Desmosome

- d) Macula adherens
- e) Microvilli

13) Microvilli are a characteristic feature of:

- a) Secretory cells
- b) Neurotransmitter cells
- c) Absorptive cells
- d) Fibroblasts
- e) Endocrine cells

14) The following bones ossify by intramembranous ossification except:

- a) Patella
- b) Maxilla
- c) Vault of the skull
- d) part of the mandible
- e) clavicle

15) Connective tissue is composed of:

- a) Cells
- b) Matrix
- c) Fibres
- d) Only a & b
- e) a,b&c

16) Connective tissue proper is classified depending on the following except:

- a) Type and number of cells
- b) Type of fibres
- c) Arrangement of fibres
- d) Amount of matrix
- e) All the above

17) As regards osteoblasts

- a) They are polygonal cells
- b) They secrete type II collagen
- c) They do not respond to parathyroid hormone
- d) They lack extensive rough endoplasmic reticulum
- e) None of the above

18) Hyaline cartilage is:

- a) Very vascular
- b) Extremely elastic
- c) Found at articular ends of long bones
- d) Found in the epiglottis and ear lobule
- e) None of the above

19) Holocrine glands exist in the:

- a) Sweat glands
- b) Breasts

- c) Sudoriferous glands
- d) Sebaceous glands
- e) Gastric glands

20) The method of secretion of exocrine glands include the following except:

- a) Holocrine
- b) Apocrine
- c) Merocrine
- d) Endocrine
- e) All the above

21. Tensor fasciae latae is supplied by:

- a) Anterior division of femoral nerve
- b) Superior gluteal nerve
- c) Nerve to vastus lateralis
- d) Inferior gluteal nerve
- e) Lateral femoral cutaneous nerve

22. The 'screw-home' movement in extension of the knee joint begins with tightening of the:

- a) Anterior cruciate ligament
- b) Oblique popliteal ligament
- c) Medial collateral ligament
- d) Lateral collateral ligament
- e) Posterior cruciate ligament

23. Tibialis anterior:

- a) Is supplied by the tibial nerve
- b) Inserts into the second metatarsal bone
- c) Is pierced by the posterior tibial artery
- d) Tendon perforates the superior extensor retinaculum
- e) Does not arise from the interosseous membrane

24. The adductor canal:

- a) Contains the femoral artery and nerve
- b) Ends distally in the adductor longus hiatus
- c) Contains no muscular nerves
- d) Has adductor longus forming the roof
- e) Always has the femoral artery lying between the saphenous nerve and the femoral vein

25. Regarding the femoral artery:

- a) Adductor magnus lies between it and the profunda femoris artery
- b) The profunda femoris vein lies behind the profunda femoris artery
- c) Profunda femoris artery arises from its posterior surface
- d) The lateral circumflex femoral artery separates the superficial and deep branches of the femoral nerve
- e) The femoral vein is always on its medial side

26. Gluteus maximus:

- a) Forms the gluteal fold

- b) Has four bursae beneath it
 - c) Has blood supply solely from the inferior gluteal artery
 - d) Is the chief control of hip flexion
 - e) Has 50% of fibres inserting into the gluteal tuberosity
- 27) Which vessel is NOT involved in the trochanteric anastomosis?
- a) Superior gluteal artery
 - b) Obturator artery
 - c) Lateral circumflex femoral artery
 - d) Medial circumflex femoral artery
 - e) Inferior gluteal artery
- 28) The sciatic nerve:
- a) lies deep to the posterior femoral cutaneous nerve
 - b) Passes down over obturator internus, quadratus, femoris and piriformis
 - c) Tibial and common peroneal components separate behind the hip joint
 - d) In the buttock it lies midway between the greater trochanter and pubic tuberosity
 - e) Is derived from L3, 4, 5, S1, 2
- 29) The following cutaneous nerves of the thigh are derived in part from the second lumbar nerve except::
- a) Ilioinguinal
 - b) Medial femoral cutaneous nerve
 - c) Obturator nerve
 - d) Lateral femoral cutaneous nerve
 - e) Genitofemoral nerve
30. Which of the following, regarding the great saphenous vein, is INCORRECT?
- a) It is the longest vein in the body
 - b) It passes behind the medial malleolus
 - c) At the knee, it lies a hand's breadth behind the medial border of the patella
 - d) The saphenous opening lies about 3cm below and lateral to the pubic tubercle
 - e) The deep external pudendal artery runs medially behind the saphenous vein near its termination
- 31) Which of the following is CORRECT regarding lymphatic drainage of the lower limb?
- a) The superficial inguinal node group consists of about 15 nodes
 - b) The lateral nodes of the proximal superficial group receive lymph from the buttock, flank and back below the waist
 - c) the medial nodes of proximal superficial group receive lymph from testes, glans penis, lower anal canal and perineum
 - d) the distal nodes of the superficial group receive all the superficial lymphatics of the lower limb
 - e) the superficial inguinal nodes drain mainly to the internal iliac nodes
32. Which of the following muscles is not found in the floor of the femoral triangle?
- a) Iliacus
 - b) Psoas
 - c) Pectineus
 - d) Adductor magnus
 - e) Adductor longus

33. All the following are branches of the femoral nerve except:
- Medial femoral cutaneous nerve
 - Saphenous nerve
 - Nerve to vastus medialis
 - Lateral femoral cutaneous nerve
 - Nerve to sartorius
34. In the medial compartment of the thigh:
- Adductor magnus consists of adductor and hamstring muscle masses
 - The contents are separated from the posterior compartment by the posterior intermuscular septum
 - Adductor longus is the most superficial muscle of the medial side of the thigh
 - The anterior division of the obturator nerve passes through obturator externus
 - The posterior division of the obturator nerve is the prime motor supply
35. Dermatomes of lower limb:
- S1 supplies the great toe
 - L2 supplies anterior upper thigh
 - S3 supplies perianal area
 - L4 supplies medial thigh
 - L5 supplies medial calf
36. The most medial structure passing under the inferior extensor retinaculum of the foot is:
- Deep peroneal nerve
 - Tibialis anterior tendon
 - Extensor hallucis longus
 - Anterior tibial artery
 - Peroneus brevis
- 37) Within the gluteal region:
- The pudendal nerve emerges beneath piriformis, turns around the back of the sacrospinous ligament and passes between the sacrotuberous and sacrospinous ligaments
 - The internal pudendal artery can be compressed against the base of the ischial tuberosity
 - The sciatic nerve (L4, 5, S1) emerges from below piriformis muscle more laterally than the inferior gluteal and pudendal nerves and vessels
 - The posterior femoral cutaneous nerve lies medially to the sciatic nerve
 - The cruciate anastomosis provides the main source of blood for the supply of the head of femur
38. Paralysis of the cruciate ligament is caused by injury to?
- Obturator nerve
 - Femoral nerve
 - Common peroneal nerve
 - Tibial nerve
 - None of the above.
39. The femoral canal:
- Is the lateral compartment of the femoral sheath

- b) lies medial to the pubic tubercle
- c) Contains the femoral nerve
- d) Is medial to the femoral vein
- e) Transmits the femoral branch of the genitofemoral nerve

40. Following an injury to the leg, a patient is unable to dorsiflex their foot. Which nerve is most likely to be damaged?

- a) The deep branch of the common peroneal nerve
- b) The sural nerve
- c) The superficial branch of the common peroneal nerve
- d) The saphenous nerve
- e) None of the above

41. With respect to peroneus longus:

- a) It inserts into the base of the 5th metacarpal
- b) It is supplied by the superficial peroneal nerve
- c) It has a broad tendon that lies between the lateral malleolus and the tendon of peroneus brevis
- d) It arises from the upper two thirds of the tibia
- e) It is mainly supplied by L4 and L5 segments

42) The anterior tibial artery:

- a) Pierces the interosseous membrane
- b) Supplies the lateral compartment of the leg
- c) Lies lateral to the deep peroneal nerve
- d) Lies lateral to tibialis anterior
- e) Gives the nutrient artery to the tibia

43) The suprapatellar bursa:

- a) Does not communicate with the knee joint
- b) Lies in front of the vastus intermedius muscle
- c) Extends 5cm or more above the patella
- d) Lies deep to the patellar retinacula
- e) None of the above

44) Which of the following does NOT apply to the popliteus muscle?

- a) It inserts into the lateral meniscus of the knee joint
- b) It is innervated by the tibial nerve
- c) It acts to extend the knee joint
- d) It inserts into the lateral condyle of the femur
- e) It acts to laterally rotate the femur of the fixed tibia

45) Regarding the popliteal fossa:

- a) The common peroneal nerve passes through the lateral part of the fossa
- b) It contains no lymph nodes
- c) It has a roof pierced by the tibial nerve
- d) The popliteal artery lies superficial to the popliteal vein throughout the fossa
- e) The small saphenous vein joins the popliteal vein before its entry into the fossa

46) Regarding the movements at the knee joint:

- a) Popliteus 'unlocks' the extended knee by producing medial rotation of the femur
 - b) There is no active rotation of the extended knee
 - c) Passive extension of the knee does not result in 'locking' of the joint
 - d) The posterior cruciate ligament prevents backward displacement of the femur on the tibial plateau
 - e) The major role of the menisci is in flexion/extension of the knee
- 47) The dorsalis pedis artery:
- a) Lies medial to the tendon of extensor hallucis longus
 - b) Lies lateral to the deep branch of the deep peroneal nerve
 - c) Crosses superficial to the tendon of extensor hallucis brevis
 - d) Terminates at the arcuate artery
 - e) Joins the lateral plantar artery to form the plantar arch
- 48) A 25 year old man is unable to plantar flex his foot. The most likely cause is damage to:
- a) The superficial peroneal nerve
 - b) The L5 nerve root
 - c) The tibial nerve
 - d) Soleus
 - e) Gastrocnemius
49. A torn anterior cruciate ligament would permit:
- A. Valgus displacement of the leg at the knee
 - B. Varus displacement of the leg at the knee
 - C. Anterior displacement of the leg at the knee
 - D. Posterior displacement of the leg at the knee
50. The "spring" ligament attaches to what two bones?
- A. Fibula and calcaneus
 - B. Tibia and calcaneus
 - C. Tibia and talus
 - D. Calcaneus and navicular
51. The ligament usually injured in a hyper-inversion of the foot (sprained ankle) is the:
- A. Anterior tibiotalar
 - B. Posterior tibiotalar
 - C. Medial collateral
 - D. Lateral collateral
52. The anterior tibial artery:
- A. is the source of the peroneal artery
 - B. continues as dorsalis pedis artery
 - C. usually travels with the superficial peroneal nerve
 - D. all of the above
53. The gastrocnemius muscle can produce:
- A. plantar flexion of the foot
 - B. flexion of the leg at the knee
 - C. both

- D. neither
54. The soleus muscle:
- A. is innervated by the tibial nerve
 - B. is a plantar flexor of the foot
 - C. both
 - D. neither
55. Which muscle inserts onto the tuberosity of the fifth metatarsal bone?
- A. Abductor digiti minimi
 - B. Peroneus brevis
 - C. Peroneus longus
 - D. Tibialis anterior
56. The muscles of the lateral compartment of the leg are:
- A. dorsiflexors of the foot
 - B. evertors of the foot
 - C. both
 - D. neither
57. Which muscle is essential to lift the heel off the ground in walking?
- A. peroneus longus
 - B. tibialis anterior
 - C. flexor hallucis longus
 - D. gastrocnemius
58. The fibular collateral ligament is:
- A. tested by the application of valgus stress, rather than varus stress, to the knee joint
 - B. located superficial to the tendon of the popliteus
 - C. attached to the lateral meniscus
 - D. located superficial to the biceps femoris tendon
58. The following structures are found in the 2nd layer of the foot EXCEPT:
- A. Quadratus plantae
 - B. Lumbricals
 - C. Flexor hallucis brevis
 - D. Flexor digitorum longus tendon
 - E. Flexor hallucis longus
59. Trendelenberg is positive in all the following conditions EXCEPT:
- A. Paralysis of gluteus Maximus
 - B. Paralysis of gluteus medius and minimus
 - C. Fracture of neck of femur
 - D. Dislocation of head of femur

E. None of the above

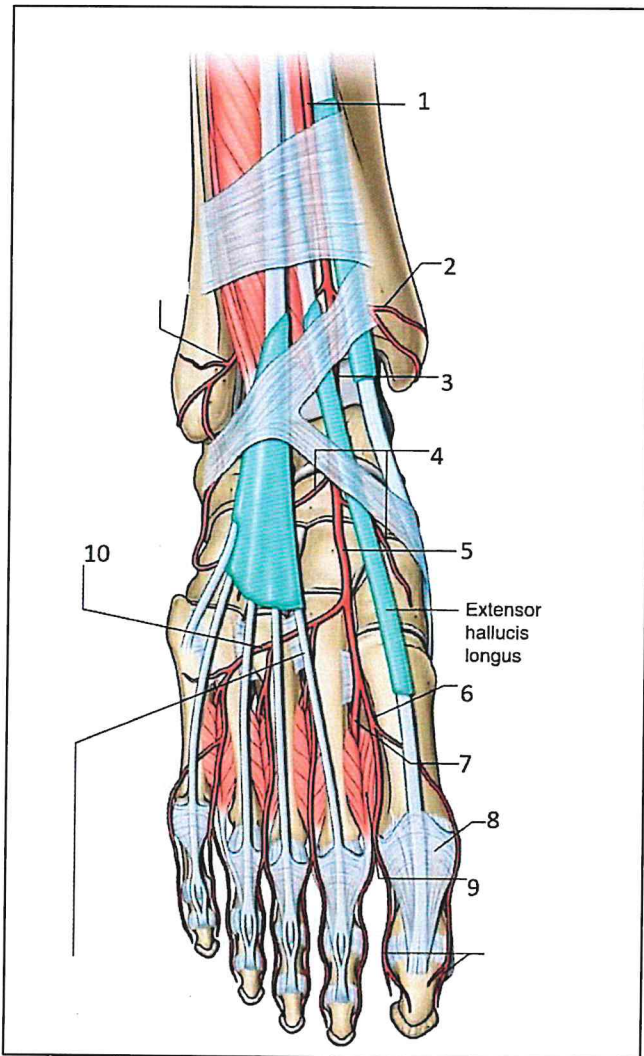
SECTION B: FILL IN THE BLANKS

1. The deep fascia of the thigh is modified into cribriform fascia and _____
2. The lateral compartment of the leg is supplied by _____ artery
3. The popliteus muscle Inserts into the _____
4. The _____ Pierces the cribriform fascia in the upper thigh
5. The skin over the femoral triangle is supplied by _____ nerve
6. The medial border of femoral ring is formed by _____ ligament
7. The _____ produces HCG to maintain the corpus luteum
8. The enamel of the teeth originates from the _____ cells
9. the sweat glands are _____ glands
10. Tendons are examples of _____ connective tissue

SECTION C: STRUCTURED QUESTIONS (5 Marks each)

1. List at least 5 branches of posterior tibial artery
2. List 5 muscles that attach to the ischium
3. Name 5 histological characteristics of a dense regular connective tissue
4. Describe the process of gastrulation

SECTION D: DIAGRAM A: LABEL THE AREAS MARKED 1 TO 10 (10 MARKS)



SECTION D: DIAGRAM B: LABEL THE AREAS MARKED 1 TO 10 (10 MARKS)

