



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

**UNIVERSITY EXAMINATIONS**

**2022/2023 ACADEMIC YEAR**

**END OF TERM 1  
MAIN CAMPUS**

**THIRD YEAR FIRST SEMESTER EXAMINATIONS**

**FOR THE DEGREE  
OF  
BACHELOR OF MEDICINE AND BACHELOR OF  
SURGERY**

**COURSE CODE: MCS 417**

**COURSE TITLE: REPRODUCTIVE HEALTH**

**DATE: 17/4/23**

**TIME 2PM- 4 PM**

**INSTRUCTIONS TO CANDIDATES**

Answer ALL questions (40 MULTIPLE CHOICE QUESTIONS)

TIME: 1.5 hours

1. Spermatogenesis is regulated by a negative feedback control system in which follicle-stimulating hormone (FSH) stimulates the steps in sperm cell formation. What is the negative feedback signal associated with sperm cell production that inhibits pituitary formation of FSH?
  - A) Testosterone
  - B) Inhibin
  - C) Estrogen
  - D) Luteinizing hormone
  - E) Human chorionic Gonadotropin
  
2. During the 12-hr period preceding ovulation, which of the following is true?
  - A) The plasma concentration of estrogen is rising
  - B) A surge of luteinizing hormone is secreted from the pituitary
  - C) The surge occurs immediately after the formation of the corpus luteum
  - D) The surge followed immediately by a fall in the plasma concentration of progesterone
  - E) The number of developing follicles is increasing
  
3. When do progesterone levels rise to their highest point during the female hormonal cycle?
  - A) Between ovulation and the beginning of menstruation
  - B) Immediately before ovulation
  - C) When the blood concentration of luteinizing hormone is at its highest point
  - D) When 12 primary follicles are developing to the antral stage
  - E) On the first day of menstruation.
  
4. In order for male differentiation to occur during embryonic development, testosterone must be secreted from the testes. What stimulates the secretion of testosterone during embryonic development?
  - A) Luteinizing hormone from the maternal pituitary gland
  - B) Human chorionic gonadotropin
  - C) Inhibin from the corpus luteum
  - D) Gonadotropin-releasing hormone from the embryo's hypothalamus
  - E) Thyroxine from fetal thyroid gland.
  
5. Giving prostaglandin E2 (PGE2) to a pregnant woman may result in an abortion. What is the best explanation for this finding?
  - A) PGE2 strongly stimulates uterine contraction
  - B) PGE2 causes constriction of the arteries leading to the placenta
  - C) PGE2 stimulates the release of oxytocin from the posterior pituitary
  - D) PGE2 increases the secretion of progesterone from the corpus luteum
  - E) It has a placebo effect
  
6. Why is milk produced only after delivery, not before?
  - A) Levels of luteinizing hormone and follicle-stimulating hormone are too low during pregnancy to support milk production

- B) High levels of progesterone and estrogen during pregnancy suppress milk production
  - C) The alveolar cells of the breast do not reach maturity until after delivery
  - D) High levels of oxytocin are required for milk production to begin, and oxytocin is not secreted until the baby stimulates the nipple
  - E) Prolactin levels are increased 10- to 20-fold at the end of pregnancy
7. During pregnancy, the uterine smooth muscle is quiescent. During the 9th month of gestation, the uterine muscle becomes progressively more excitable. What factors contribute to the increase in excitability?
- A) Placental estrogen synthesis rises to high rates
  - B) Progesterone synthesis by the placenta decreases
  - C) Uterine blood flow reaches its highest rate
  - D) Prostaglandin E<sub>2</sub> synthesis by the placenta decreases
  - E) Activity of the fetus falls to low levels
8. Which of the following is produced by the trophoblast cells during the first 3 weeks of pregnancy?
- A) Estrogen
  - B) Luteinizing hormone
  - C) Oxytocin
  - D) Human chorionic gonadotropin
  - E) None of the above
9. Birth control pills containing combinations of synthetic estrogen and progesterone compounds given for the first 21 days of the menstrual cycle are effective in preventing pregnancy. What is the explanation for their efficacy?
- A) Prevention of the preovulatory surge of luteinizing hormone secretion from the pituitary gland
  - B) Prevention of development of the ovarian follicles
  - C) Suppressing function of the corpus luteum soon after it forms
  - D) Prevention of normal development of the endometrium
  - E) Causes early embryonic stage pregnancy termination.
10. A "birth control" compound for men has been sought for several decades. Which of the following would provide effective sterility?
- A) Substance that mimics the actions of luteinizing hormone
  - B) Substance that blocks the actions of inhibin
  - C) Substance that blocks the actions of follicle-stimulating hormone
  - D) Substance that mimics the actions of gonadotropin-releasing hormone
  - E) A compound that significantly reduces male libido
11. Before implantation, the blastocyst obtains its nutrition from the uterine endometrial secretions. How does the blastocyst obtain nutrition during the first week (7 days) after implantation?
- A) It continues to derive nutrition from endometrial secretions

- B) The cells of the blastocyst contain stored nutrients that are metabolized for nutritional support
  - C) The placenta provides nutrition derived from maternal blood
  - D) The trophoblast cells digest the nutrient-rich endometrial cells and then absorb their contents for use by the blastocyst
  - E) It only next gets nourished with the placenta at 8 weeks.
12. What is the most common reason for a spontaneous abortion in the first trimester?
- A) Uterine abnormality
  - B) Chromosomal abnormality
  - C) Endocrine disorder
  - D) Thrombophilia
  - E) Cervical insufficiency
13. A woman in the early first trimester of pregnancy presents for evaluation of vaginal bleeding. You order a  $\beta$ -hCG test. Over what time period would you expect the  $\beta$ -hCG level to approximately double?
- A) 48–72 hrs
  - B) 12–24 hrs
  - C) 24–48 hrs
  - D) 96–110 hrs
  - E) > 120 hrs
14. The Expected date of delivery of a human pregnancy can be calculated:
- A) From a change in the patient's weight.
  - B) As 10 lunar months after the time of ovulation.
  - C) As 40 weeks after last menstrual period.
  - D) As 280 days from the last full moon.
  - E) As 36 weeks after the last menstrual period
15. As pregnancy advances, which of the following hematological changes occurs?
- A) Plasma volume increases proportionally more than red cell volume.
  - B) Red cell volume increases proportionally more than plasma volume.
  - C) Plasma volume increases & red cell volume remains constant.
  - D) Red cell volume decreases & plasma volume remains constant.
  - E) Neither plasma volume nor red blood cell volume changes.
16. Aetiological factors in spontaneous preterm labour – which of the following is FALSE?
- A) Delivery before 34 weeks occurs in 20% of twins.
  - B) Spontaneous preterm labour is more common in the presence of fetal compromise.

- C) Uterine abnormalities such as fibroids or müllerian abnormalities are a cause of first-trimester miscarriage, but not preterm delivery.
- D) Infection is very common with preterm delivery.
- E) Pre-eclampsia is associated with preterm delivery.

17. The following statements refer to prediction and prevention of preterm labour – which is FALSE?

- A) Strategies for prevention of preterm birth, in those at high risk, are commenced from 24 weeks.
- B) cervical suture should only be inserted if the cervical length on transvaginal sonography (TVS) is short.
- C) Antibiotics in treating bacterial vaginosis may prevent preterm labour.
- D) Progesterone pessaries may prevent preterm labour in at-risk patients.
- E) Cervical length on TVS is a sensitive method for prediction of delivery before.

18. Investigations and management of preterm labour – which of the following is TRUE?

- A) Fetal fibronectin as a test for preterm labour is highly sensitive.
- B) WBC count and CRP estimation aren't indicated.
- C) Steroids reduce perinatal mortality by promoting pulmonary maturity. They are only given from 22 until 32 weeks.
- D) Tocolysis may not be helpful to allow steroid administration or *in utero* transfer to a unit with neonatal intensive care facilities.
- E) Magnesium sulphate doesn't reduce the risk of neonatal handicap.

19. With regard to history taking, indicate which statement is FALSE?

- A) Parity is the number of potentially viable babies the woman has delivered.
- B) Superficial dyspareunia is felt on penetration.
- C) A cervical smear should be performed every 3 years between the ages of 50 and 64.
- D) LMP refers to the date of the last day of bleeding in a regular cycle.
- E) Gravidity refers to the number of times a woman has been pregnant.

20. The following are true symptoms of pregnancy EXCEPT?

- A) Amenorrhoea
- B) Bleeding
- C) Urinary frequency
- D) Nausea and vomiting
- E) Breast tenderness

21. Questions specific and essential to an obstetric history do NOT include which one of the following?

- A. Presenting complaint and reason for admission if the woman is an inpatient
- B. Date of last cervical smear and whether she has had treatment for an abnormal one
- C. Parity and details of previous pregnancies
- D. Gestation and certainty

- E. A history of diabetes in second-degree relatives
22. Abdominal findings in normal pregnancy doesn't include which of the following?
- A. Fundus first palpable at 12 weeks
  - B. Fundus at umbilicus at 20 weeks
  - C. Fundus at xiphoid sternum only at term
  - D. Symphysial-fundal height may be off by up to 2 centimeters in either direction and still be considered normal.
  - E. A free head after 37 weeks in a multiparous woman
23. Which of the following factors does NOT put a woman at increased risk of obstetric complications?
- A) Both extremes of maternal age
  - B) One previous caesarean section
  - C) A history of subfertility, with use of fertility drugs or assisted conception.
  - D) Family history of diabetes in a second-degree relative
  - E) Smoking
24. The statements below refer to booking visit investigations – which is not true?
- A) An ultrasound scan should be offered between 11 and 13+6 weeks.
  - B) Screening for infections implicated in preterm labour, e.g. *Chlamydia* and bacterial vaginosis, is offered routinely.
  - C) Venereal Disease Laboratory testing is part of the profile
  - D) Best screening for chromosomal abnormalities includes the combined test done in early trimester.
  - E) HIV testing is routine in the Kenya.
25. . Physiological changes in pregnancy does not include which of the following?
- A) Decrease of blood volume by 50%
  - B) The normal lower limit of haemoglobin is 11.0 g/dL
  - C) White blood cell increase
  - D) Cardiac output 40% increase
  - E) Peripheral resistance 50% decrease
26. Identify a true statement from the following.
- A) The oocyte is fertilized in the main uterine corpus.
  - B) The blastocyst invades the myometrium and its outer layer, the trophoblast, forms the placenta.
  - C) The trophoblast produces hormones almost immediately, notably human chorionic gonadotropin (detected in pregnancy tests), which will peak at 12 weeks.
  - D) Placental morphology is fully formed at 4–5 weeks.
  - E) A fetal heartbeat is established at around 10 days.
27. True definitions of miscarriage include the following except?
- A) When there is bleeding but the fetus is still alive this is termed a threatened miscarriage
  - B) In the presence of bleeding with an open os, miscarriage is inevitable
  - C) A miscarriage is complete once all tissue has been passed and the os has closed once more
  - D) Endometritis as a result of infected products of conception may also be termed septic miscarriage

E) Missed miscarriage occurs when the uterus is larger than expected from the dates and the os is open. There may or may not be bleeding.

28. In the management of miscarriage which of the following is FALSE?

- A) Expectant management can be continued as long as the woman is willing and there are no signs of infection.
- B) Medical management is successful in >80% of women with incomplete miscarriage.
- C) Manual evacuation of retained products of conception should be performed for complete miscarriage.
- D) Surgical evacuation is suitable if there is heavy bleeding or signs of infection.
- E) Infection rates are similar between expectant, medical or surgical management.

29. Regarding the normal bony pelvis, which of the following is FALSE?

- A) The inlet of the pelvis is widest in its transverse diameter at about 13 cm.
- B) The mid-cavity is almost round, as the transverse and AP diameters are roughly similar.
- C) At the outlet, the AP diameter is about 13 cm.
- D) Station 0 means the head is at the level of the ischial spines, approximately mid-cavity.
- E) The coccyx causes obstruction of labour.

30. Attitude and position of the fetal head – which of the following is true?

- A) Attitude is the degree of flexion of the head on the neck. The ideal attitude is maximal extension, keeping the head bowed.
- B) Maximal flexion is called vertex presentation and it presents the smallest diameter of fetal head.
- C) Position is the relation of the fetal sinciput to the maternal bony pelvis.
- D) The head must normally rotate internally during labour.
- E) The head usually delivers in the occipito-posterior position (OP).

31. In general care of the woman in labour, which of the following are false?

- A) Aortocaval compression can be avoided by maintaining at least 15° of left lateral tilt.
- B) Intravenous antibiotics are warranted if the temperature is >38.0 °C.
- C) Semi-recumbent, squatting, kneeling or left lateral positions are all appropriate for delivery.
- D) Drinking is contraindicated in labour to avoid Mendelson's syndrome if a general anaesthetic is required.
- E) Emotional support improves labour progress.

32. During progress in labour problems and their treatment – which of the following is FALSE?

- A) The partogram aids identification of abnormal progress.
- B) Artificial rupture of membranes can be an action to boost uterine contractions.
- C) When hyperactive uterine contractions occur, uterotonics can be given.
- D) Epidural analgesia is associated with an increased risk of instrumental delivery.
- E) Occipito-posterior position in later stage is a cause of protracted labour

33. Which of the following is NOT a cause of fetal damage or death in labour?

- A) Fetal hypoxia
- B) Infection with group B streptococcus
- C) Chemical pneumonitis from meconium aspiration



- D) Fetal blood loss
- E) Fetal volume overload

34. Physiology of the menstrual cycle. Identify which of the following statement is correct.

- A) Ovulation follows 36 hours after peak of the LH surge.
- B) LH surge is as a result of 'positive feedback' effect on the hypothalamus and pituitary of oestrogen at its maximum.
- C) The corpus luteum produces oestradiol.
- D) Withdrawal of endogenous progesterone results in endometrial breakdown and subsequent menstruation.
- E) Average cycle length is 23–35 weeks

35. The following statements refer to heavy menstrual bleeding (HMB). Which is FALSE?

- A) Clinically, HMB can be defined as excessive menstrual blood loss that interferes with a woman's physical, emotional, social or material quality of life.
- B) It is necessary to measure that a woman loses >80 mL/menstrual cycle to diagnose HMB.
- C) Uterine fibroids and polyps are common causes of HMB.
- D) Thyroid disease, haemostatic disorders and use of anticoagulant medication should be considered.
- E) Medical treatment with levonorgestrel intrauterine system (Mirena) is acceptable.

36. Which of the following statement is true regarding the anatomy and function of the cervix?

- A) The uterosacral ligaments attach the cervix laterally to the pelvic side walls.
- B) The endocervix, continuous with the vagina, is lined by squamous epithelium.
- C) The lower pH of the vagina causes the exposed area of the columnar epithelium approaching the 'squamocolumnar junction' to undergo dysplasia to squamous epithelium, producing a 'transformation zone.'
- D) The cervix is supplied by upper vaginal branches and the uterine artery.
- E) Lymph drainage is to the paracervical nodes.

37. The ovarian artery is a branch of:

- A. Common iliac artery.
- B. Internal iliac artery.
- C. Aorta.
- D. Hypogastric artery.
- E. Sacral artery.

38. Regarding the anatomy and function of the ovaries, identify the true statement.

- A) Oestrogen is secreted by granulosa cells in the growing follicles and also by theca cells.
- B) After ovulation, the collapsed follicle becomes a corpus luteum, which continues to produce oestrogen and progesterone to support the endometrium whilst awaiting fertilization and implantation.
- C) If fertilization and implantation occur then hCG produced from the trophoblast maintains the corpus luteum until 7–9 weeks.
- D) Surface of ovary is covered by peritoneum



39. Components of biophysical profile include all of the following, EXCEPT:

- A. Fetal movement
- B. Placental thickness
- C. Fetal tone
- D. Fetal breathing movement
- E. Amniotic fluid volume assessment

40. Using your knowledge of normal maternal physiology, which of the following would employ if a 38 weeks' pregnant patient become faint while lying supine on your examination table:

- A. Blood transfusion.
- B. Turning the patient on her left side.
- C. Oxygen by face mask.
- D. I.V. saline solution.
- E. None of the above