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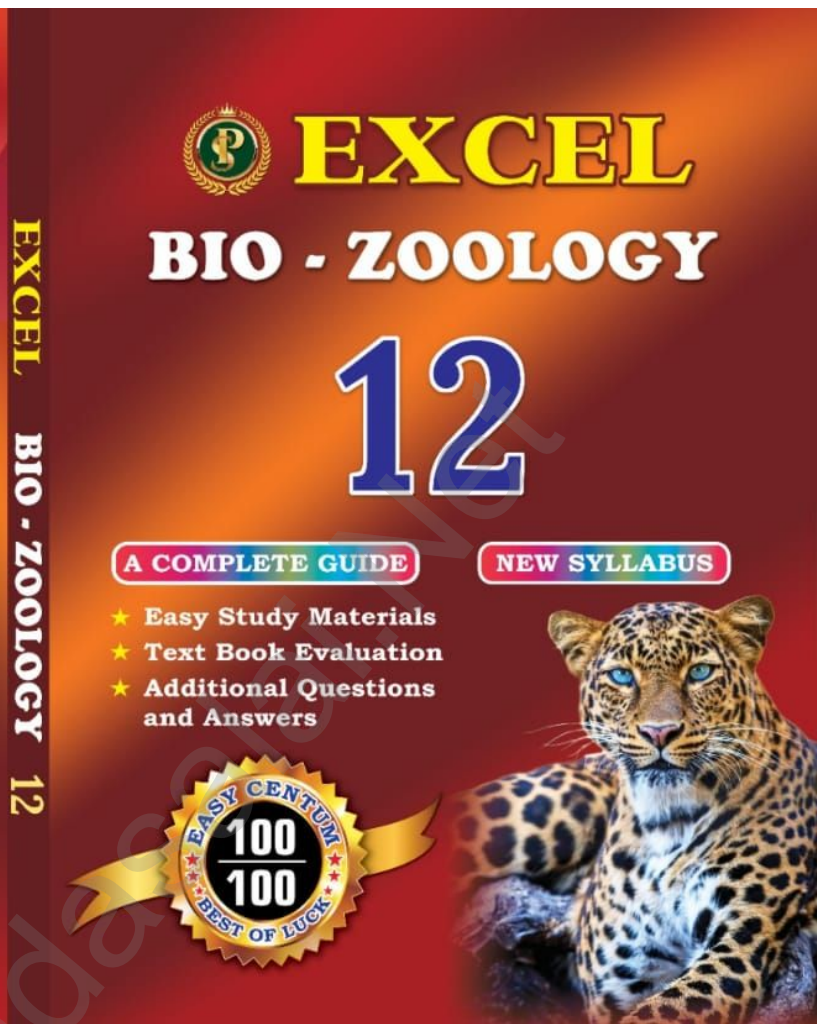
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EXCEL

BIO - ZOOLOGY

12

A COMPLETE GUIDE **NEW SYLLABUS**

- ★ Easy Study Materials
- ★ Text Book Evaluation
- ★ Additional Questions and Answers

EASY CENTUM
100
100
BEST OF LUCK

EXCEL BIO - ZOOLOGY 12

EXCEL GUIDE - XII BIO - ZOOLOGY

- ❖ from rete testis sperm enter ____ through the vas deferentia
 - ❖ ____ is the terminal portion of male reproductive system
 - ❖ Number of seminal vesicles
 - ❖ ____ enhances sperm motility
 - ❖ ____ is present inferior to the prostate gland
 - ❖ ____ encircle the urethra
 - ❖ prostate gland located just below the ____
 - ❖ glans penis is covered by a loose fold of skin called
 - ❖ The ovary is an elliptical structure about ____ cm long
 - ❖ Each ovary is covered by ____ epithelium
 - ❖ ovarian stroma encloses by ____
 - ❖ Below germinal epithelium is a dense connective tissue called
 - ❖ Ovary attached to pelvic wall by an ovarian ligament called
 - ❖ The proximal part of the fallopian tube bears a funnel shaped
 - ❖ The edges of the infundibulum have many finger like projections called
 - ❖ After ovulation, ____ helps in collection of the ovum
 - ❖ The infundibulum leads to a wider central portion called
 - ❖ The last part of the oviduct is the ____
 - ❖ The uterus opens into the vagina through a narrow ____
 - ❖ The ____ along with vagina forms the birth canal
 - ❖ Outermost serous layer of uterus is ____
 - ❖ Middle muscular layer of uterus is ____
 - ❖ Inner glandular layer of uterus is ____
 - ❖ The endometrium undergoes cyclic changes during the ____
 - ❖ ____ exhibits strong contractions during parturition
 - ❖ ____ are located posterior to the left and right of the opening of the vagina
 - ❖ Bartholin's glands homologous to the ____ of the male
 - ❖ ____ glands around the lower end of the urethra
 - ❖ Lubricating fluid of skene's gland homologous to the ____ of male
 - ❖ External genitalia partially closed by ring of tissue called
 - ❖ ____ is often torn during the first coitus
 - ❖ ____ modified sweat glands
 - ❖ ____ reduce cracking of the skin of the nipple
 - ❖ ____ is rudimentary in the males and functional in the females
 - ❖ ____ is the process of formation of gametes
 - ❖ ____ plays the most significant role in the process of gametogenesis
 - ❖ ____ migrate into the testes and become immature germ cells
 - ❖ sperm mother cells otherwise called
 - ❖ In the first stage spermatogonia migrate among ____ towards central lumen of seminiferous tubules
- Epididymis
 - urethra
 - 2 (a pair)
 - Vesiculase
 - Bulbo urethral glands
 - prostate gland
 - urinary bladder
 - foreskin(or)prepuce
 - 2-4 cm
 - cuboidal
 - germinal epithelium
 - Tunica albuginea
 - mesovarium
 - Infundibulum
 - fimbriae
 - fimbriae
 - ampulla
 - Isthmus
 - cervix
 - cervical canal
 - perimetrium
 - myometrium
 - endometrium
 - menstrual cycle
 - myometrium
 - Bartholin's glands
 - Bulbourethral gland
 - skene's glands
 - prostate gland
 - Hymen
 - Hymen
 - mammary glands
 - sebaceous glands
 - mammary glands
 - gametogenesis
 - meiosis
 - primordial germ cells
 - spermatogonia
 - sertoli cells

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- ❖ ____ spermatocyte which are haploid with 23 chromosomes - **secondary**
- ❖ The spermatids transformed in to mature spermatozoa by the process called ____ - **spermiogenesis**
- ❖ The whole process of spermatogenesis takes about __ days - **64 days**
- ❖ spermatogenesis starts at the age of puberty and initiated due to release ____ by the hypothalamus - **Gonadotropin releasing hormone**
- ❖ Testicular growth and enhances the production of Androgen Binding protein by the - **Sertoli cells**
- ❖ LH acts on the Leydig cells and stimulates synthesis of ____ - **Testosterone**
- ❖ Acrosome of the sperm formed by ____ - **Golgi body**
- ❖ Acrosome of sperm contains a proteolytic enzyme called - **Hyaluronidase**
- ❖ ____ helps to penetrate the sperm into the ovum - **Hyaluronidase**
- ❖ ____ gives rise to the axial filament of the sperm - **Distal centriole**
- ❖ In sperm mitochondria spirally twisted around axial filament by - **Nebkeren**
- ❖ ____ produces energy in the form of ATP for the movement - **mitochondrial spiral (or) Nebenkern.**
- ❖ other name of central axial filament (in the tail of sperm) - **Axoneme**
- ❖ ____ is the process of development of female gamete (or) ovum - **Oogenesis**
- ❖ Egg mother cells otherwise called ____ - **oogonia**
- ❖ The oogonial cells start dividing and enter into ____ of meiosis I - **prophase I**
- ❖ ____ are temporarily arrested at prophase I - **primary oocyte**
- ❖ primary oocyte surrounded by single layer of granulosa cells to form - **primary follicles**
- ❖ primary follicle surrounded by granulosa cells and theca form ____ - **secondary follicle**
- ❖ The tertiary follicle eventually becomes a mature follicle or ____ - **graafian follicle**
- ❖ ____ is non-cleidoic ,alecithal type - **Human ovum**
- ❖ ____ of human ovum otherwise called ooplasm - **cytoplasm**
- ❖ ooplasm contains a large nucleus called the ____ - **germinal vesicle**
- ❖ Human ovum is surrounded by ____ coverings - **three**
- ❖ ____ present between vitelline membrane and zona pellucida - **perivitelline space**
- ❖ menstrual cycle comprises ____ phases - **four**
- ❖ ____ is an indicator of normal reproductive phase - **cyclic menstruation**
- ❖ menstrual flow is due to the breakdown of ____ lining of uterus - **endometrium**
- ❖ breakdown of endometrium and blood vessels due to decline of ____ & ____ - **progesterone & oestrogen**
- ❖ In menstrual cycle ____ phase otherwise called proliferative phase - **follicular**
- ❖ The follicular phase extends from the 5th day of the cycle until the time of ____ - **ovulation**
- ❖ During follicular phase the ____ regenerates through proliferation - **endometrium**
- ❖ ____ & ____ hormone attain peak level in the middle of the menstrual cycle - **LH & FSH**

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37. The secondary spermatocyte undergo second meiotic division to produce
- a. four diploid spermatids
 - b. one polar body and one spermatids
 - c. four haploid spermatids**
 - d. four haploid spermatozoa
38. chromosome number in primary spermatocyte
- a. haploid
 - b. diploid
 - c. haploid with 23 pairs
 - d. diploid with 23 pairs**
39. chromosome number in secondary spermatocyte
- a. diploid
 - b. haploid with 23 chromosomes**
 - c. haploid with 23 pairs
 - d. diploid with 23 pairs
40. At the end spermatogenesis, secondary spermatocyte produce ___ haploid spermatids
- a. one
 - b. two
 - c. three
 - d. four**
41. spermiogenesis means
- a. formation of spermatids
 - b. spermatogonia forms primary spermatocyte
 - c. spermatid transformed into spermatozoa**
 - d. formation of testis
42. which activity helps in the process of spermiogenesis
1. FSH stimulates testicular growth
 2. FSH enhances the production of Lutenizing hormone
 3. FSH enhances the production of Androgen Binding Protein by sertoli cells
 4. Leydig cells stimulates the synthesis of Testosterone
- a. 1 alone
 - b. 2 alone
 - c. 1 & 3**
 - d. 3 & 4
43. ___ is present at tip of the nucleus of the sperm
- a. Acrosome**
 - b. spermatogonia
 - c. axeneme
 - d. polar body
44. ___ is otherwise called Axoneme
- a. mitochondrial spiral
 - b. central axial filament**
 - c. Nebenkern
 - d. proximal filament
45. Out of the following which one disintegrates during Oogenesis
- a. 1st polar body alone
 - b. 2nd polar body
 - c. graffian follicle
 - d. Both polar bodies**
46. The antrum present in the ___ follicle
- a. primary
 - b. secondary**
 - c. tertiary
 - d. Both secondary and tertiary
47. Find out the correct statement, If fertilization does not take place
- a. second meiotic division completed, egg will develop
 - b. After first meiotic division completed, egg disintegrates
 - c. second meiotic division is never completed and the egg disintegrates**
 - d. all the above
48. At the end of Oogenesis, each primary oocyte gives rise to _____
- a. Only one haploid ovum**
 - b. four haploid ovum
 - c. Only one diploid ovum
 - d. four diploid ovum

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49. Choose correct answers

- | | |
|-------------------------------|-------------------------|
| 1. Cytoplasm of ovum | - a. corona radiata |
| 2. inner transparent membrane | - b. zona pellucida |
| 3. middle thick membrane | - c. vitelline membrane |
| 4. outer thick membrane | - d. ooplasm |

- | | |
|----------------------------|-----------------------------|
| a) I. d II. c III. b IV. a | b) I. d II. c III. a IV. b |
| c) I. a II. b III. c IV. d | d) I. c II. a III. b. IV. d |

50. Choose the correct order of menstrual cycle:-

- | | | | |
|------------------------------|--------------------------------------|---------------|---------------|
| 1. ovulatory phase | 2. follicular or proliferative phase | | |
| 3. Luteal or secretory phase | 4. Menstrual phase | | |
| a) 1, 2, 3, 4 | b) 1, 3, 2, 4 | c) 4, 2, 1, 3 | d) 2, 4, 3, 1 |

51. Menstrual flow due to the

1. breakdown of endometrial lining of the uterus
2. breakdown of endometrial blood vessels
3. decline in the level of progesterone & oestrogen
4. increasing level of progesterone & oestrogen

- | | | | |
|------------|----------|----------|------------------|
| a) 1,2 & 3 | b) 1 & 2 | c) 3 & 4 | d) all the above |
|------------|----------|----------|------------------|

52. Absence of menstruation due to

- | | | | |
|--------------|-----------|----------------------|------------|
| 1. pregnancy | 2. stress | 3. hormonal disorder | 4. anaemia |
|--------------|-----------|----------------------|------------|

- | | | | |
|------------|----------|----------|------------------|
| a) 1,2 & 3 | b) 1 & 3 | c) 2 & 4 | d) all the above |
|------------|----------|----------|------------------|

53. The endometrium regenerates through proliferation in the ____ phase

- | | |
|--------------------|---------------------|
| a. Menstrual phase | b. Follicular phase |
| c. Ovulatory phase | d. Luteal phase |

54. In the follicular phase, follicle cells stimulated by ____ hormones

- | | | | |
|--------|-------------|-------|-----------------|
| a. FSH | b. FSH & LH | c. LH | d. progesterone |
|--------|-------------|-------|-----------------|

55. In the ____ phase ovary and uterus are induced by secretion of FSH and LH

- | | |
|---------------------|--------------------|
| a. follicular phase | b. menstrual phase |
| c. ovulatory phase | d. luteal phase |

56. FSH and LH increase gradually stimulates ____ and ____ by the follicle cells.

- | | |
|--|----------------------|
| a. follicular development and secretion of oestrogen | d. none of the above |
| b. uterus and endometrium development | |
| c. menopause and menarche | |

57. LH and FSH attain peak level in the middle of the menstrual cycle

- | | | | |
|------------------|-------------------|-------------------|-------------------|
| a. about 5th day | b. about 10th day | c. about 14th day | d. about 28th day |
|------------------|-------------------|-------------------|-------------------|

58. LH surge induces the rupture of the

- | | |
|----------------------|------------------------|
| a. graffian follicle | b. release of the ovum |
| c. Both a & b | d. none of the above |

59. Due to LH surge, ovum release from the ovary wall into the ____

- | | | | |
|---------------------|----------------------|------------------|--------------------|
| a. abdominal cavity | b. peritoneal cavity | c. pelvic cavity | d. pectoral cavity |
|---------------------|----------------------|------------------|--------------------|

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CHAPTER**3****REPRODUCTION
HEALTH****EVALUATION**

- Which of the following is correct regarding HIV, hepatitis B, gonorrhoea and trichomoniasis?
 - Gonorrhoea is a STD whereas others are not.
 - Trichomoniasis is a viral disease whereas others are bacterial.
 - HIV is a pathogen whereas others are diseases.**
 - Hepatitis B is eradicated completely whereas others are not. .
- Which one of the following groups includes sexually transmitted diseases caused by bacteria only?
 - Syphilis, gonorrhoea and candidiasis
 - Syphilis, chlamydia and gonorrhoea**
 - Syphilis, gonorrhoea and trichomoniasis
 - Syphilis, trichomoniasis and pediculosis .
- Identify the correct statements from the following
 - Chlamydia is a viral disease.
 - Gonorrhoea is caused by a spirochaete bacterium, Treponema palladium.
 - The incubation period for syphilis is 2 to 14 days in males and 7 to 21 days in females. .
 - Both syphilis and gonorrhoea are easily cured with antibiotics.**
- A contraceptive pill prevents ovulation by
 - blocking fallopian tube
 - inhibiting release of FSH and LH**
 - stimulating release of FSH and LH
 - causing immediate degeneration of released ovum. .
- The approach which does not give the defined action of contraceptive is

a)	Hormonal contraceptive	Prevents entry of sperms, prevent ovulation and fertilization
b)	Vasectomy	Prevents spermatogenesis
c)	Barrier method	Prevents fertilization
d)	Intra uterine device	Increases phagocytosis of sperms, suppresses sperm motility and fertilizing capacity of sperms

- Read the given statements and select the correct option.
Statement 1: Diaphragms, cervical caps and vaults are made of rubber and are inserted into the female reproductive tract to cover the cervix before coitus.

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Statement 2: They are chemical barriers of conception and are reusable.

- Both statements 1 and 2 are correct and statement 2 is the correct explanation of statement 1.
- Both statements 1 and 2 are correct but statement 2 is not the correct explanation of statement 1.
- Statement 1 is correct but statement 2 is incorrect.**
- Both statements 1 and 2 are incorrect.

7. Match column I with column II and select the correct option from the codes given below.

Column I	Column II
A. Copper releasing IUD	i) LNG-20
B. Hormone releasing	ii) Lippes loop IUD
C. Non medicated IUD	iii) Saheli
D. Mini pills	iv) Multiload-375

- A-(iv), B-(ii), C-(i), D-(iii)
- A-(iv), B-(i), C-(iii), D-(ii)
- A-(i), B-(iv), C-(ii), D-(iii)
- A-(iv), B-(i), C-(ii), D-(iii).**

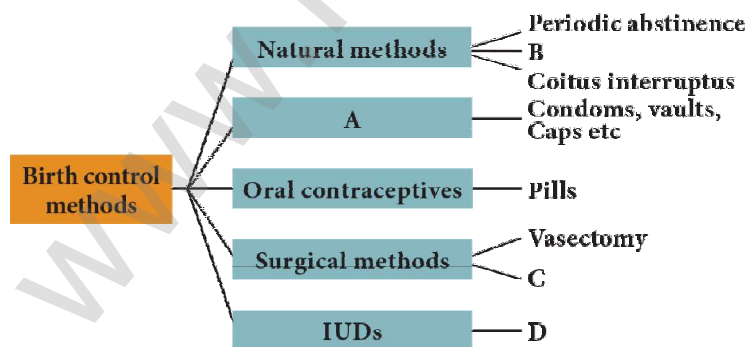
8. Select the incorrect action of hormonal contraceptive pills from the following

- Inhibition of spermatogenesis.**
- Inhibition of ovulation.
- Changes in cervical mucus impairing its ability to allow passage and transport of sperms.
- Alteration in uterine endometrium to make it unsuitable for implantation.

9. What is amniocentesis? Why a statutory ban is imposed on this technique?

Amniocentesis, the foetal sex determination test, is banned because this technique is misused for knowing the sex of the foetus followed by female foeticide

10. Select the correct term from the bracket and complete the given branching tree



(Barriers, Lactational amenorrhoea, CuT, Tubectomy)

Answer: A. Barriers B. Lactational amenorrhoea C. Tubectomy D. CuT.

11. Correct the following statements

- ❖ Transfer of an ovum collected from donor into the fallopian tube is called ZIFT.
- ❖ Transferring of an embryo with more than 8 blastomeres into uterus is called GIFT.
- ❖ Multiload 375 is a hormone releasing IUD.

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31. **Incubation period of AIDS**
a. 2 to 3 weeks or upto 6 weeks
b. 1-8 months
c. 2 - 21 days (average 6 days)
d. **2 to 6 weeks even more than 10 years**
32. **Identify the wrong statement regarding Cervical cancer**
a. **pectoral pain**
b. pelvic pain
c. increased vaginal discharge
d. abnormal vaginal bleeding
33. **Cervical cancer can be diagnosed by**
a. Papanicolaou smear(PAP smear)
b. combined with an HPV test
c. **Both a & b**
d. a alone
34. **Stages of cervical cancer can be determined by**
1. X-Ray 2. CT scan 3. MRI scan 4. PET scan
a. 1 & 2 alone b. 2 & 3 alone c. 1 & 4 alone d. **all the above**
35. **Cervical cancer can not be treated by ____ method**
a. radiation therapy b. surgery c. chemotherapy d. **laproscopy**
36. **out of the following which one minimize the risk of cervical cancer**
1. Healthy diet & regular exercise 2. avoiding tobacco usage
3. preventing early marriages 4. practicing monogamy
a. 1 alone b. 2 alone c. 3 & 4 d. **all the above**
37. **____ damages many aspects of health especially the menstrual cycle**
a. Reproduction b. Life style c. **Long-term stress** d. menopause
38. **These factors causes Infertility**
1. Ingestion of toxins (heavy metal cadmium) 2. Heavy use of alcohol
3. tobacco & marijuana 4. injuries to the gonads and aging
a. **all the above** b. none of these c. 1 & 2 d. 3 & 4
39. **Initially, IVF is used to treat women with ____ fallopian tubes**
a. **blocked** b. damaged c. absent d. all the above
40. **Most common causes of infertility in women**
a. Pelvic inflammatory disease(PID) b. Uterine fibroids
c. Endometriosis d. **all the above**
41. **What will happen If a man wear tight clothing**
1. may raise the temperature in the scrotum 2. affect sperm production
3. may raise blood sugar level d. affect formation RBC and WBC
a. 1 alone b. **1 & 2 alone** c. 3 & 4 d. none of these
42. **____ increases the chance of pregnancy in infertile couples**
a. Birth control method b. Intrauterine Devices
c. **Assisted reproductive technology** d. Amniocentesis
43. **The basic steps in an IVF treatment cycle are**
1. Ovarian stimulation 2. Egg retrieval & fertilization
3. Embryo culture 4. Embryo transfer
a. none of the above b. 1 & 2 c. 3 & 4 d. **all the above**

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29. Identify the correct pair :

- I Klinefelter syndrome - a) Trisomy-13
 II Down's syndrome - b) 44+XO
 III Turner's syndrome - c) 44-XXY
 VI Patau's syndrome - d) Trisomy-21
 a) **Ic, II d, III b, IV a** b) Id, II c, III b, IV a c) Ia, II b, III c, IV d d) Ib, II d, III a, IV c

30. Gynaecomastia means

- a) **Feeble breast** b) Webbed neck
 c) rudimentary gonads d) Malformation of brain

31. A marriage between a colourblind man and a normal woman produces.

- a) 50% carrier daughters, 50% normal daughters
 b) **All carrier daughters and normal sons**
 c) 50% colourblind sons, 50% normal sons. d) All carrier offsprings

32. Co-dominant blood group is

- a) A b) B c) **AB** d) 0

33. People with ___ have 45 (44+XO) chromosomes

- a) **Turner's syndrome** b) Klinefelter's syndrome c) Down's syndrome d) Patau's syndrome

34. People with _____ have 47 chromosome (44+XXY)

- a) Turner's syndrome b) **Klinefelter's syndrome** c) Down's syndrome d) Patau's syndrome

35. Kin selection is seen in _____

- a) Drosophila b) **Honeybees** c) Cockroach d) Grasshopper

36. Match the correct pair

- I. Chromosome 6 - a) Holandric genes
 II. Hypertrichosis - b) Blood groups
 III. Chromosome 11 - c) PAH genes
 IV. Chromosome 12 - d) HBB genes
 a) Ia, IIb, IIIc, IVd b) **Ib, IIa, III d, IV c** c) Id, IIc, IIIb, IVa d) Ia, IIc, IIIb, IVd

37. Identify the correct statement :

1. People with $I^B I^O$ Genotype have O blood group
 2. Y linked genes are transmitted from mother to son
 3. fertilised eggs develop into drones
 4. Human Y chromosome is shorter than X chromosome
- a) 1,4 b) 2,3,4 c) 1&2 d) **4**

38. Find out the odd one

- a) 21 trisomy b) Patau's syndrome c) **haemophilia** d) Turner's syndrome

39. Find out the correct statement regarding haemophilia.

- a) Dominant genes responsible present in X-chromosome
 b) Dominant genes responsible present in Y-chromosome
 c) **Recessive genes responsible present in X-chromosome**
 d) Responsible dominant gene present in the autosomal chromosome

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16. Open reading frame.

Any sequence of DNA or RNA beginning with a start codon and which can be translated into protein.

17. What is the function of Deoxynucleotide triphosphate in replication?

Deoxynucleotide triphosphate act as substrate and also provides energy for polymerization reaction.

18. Write the some events of eukaryotic replication

1. Unwinding of DNA.
2. Joining of okazaki fragments
3. Addition of nucleotides to new strand
4. Correcting the repair.

19. What is repetitive DNA?

In the DNA sequence, at specific regions, a small stretch of DNA is repeated many times is known as repetitive DNA.

20. Operons.

The clusters of gene with related function are called operons.

21. What is charging or aminoacylation?

The process of addition of amino acid to tRNA is known as charging or aminoacylation.

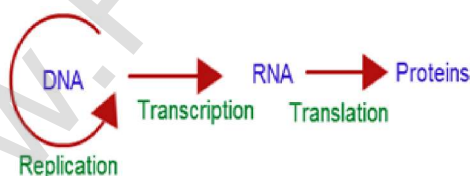
22. Okazaki fragments.

The discontinuously synthesized fragments of the lagging strand are called the okazaki fragments are joined by the enzyme DNA ligase.

FOR CENTUM SCORERS

23. Who proposed the central dogma? Won't its concept.

- ❖ Francis crick.
- ❖ The central dogma in molecular biology which states that genetic information flows as follows



24. What is TATA box? State its function?

- ❖ In Eukaryotes, the promoter has AT rich regions called TATA box or Goldberg - Hogness box
- ❖ It acts as a binding site for RNA polymerase.

25. Structural gene of eukaryotic differ from prokaryotes. How?

- ❖ In Eukaryotes the structural gene is monocistronic coding for only protein.
- ❖ In prokaryotes the structural gene is polycistronic coding for many proteins.

26. Exons and Introns.

- ❖ Expressed sequences(coding sequences) of an eukaryotic gene called Exons.
- ❖ Intervening sequences (non-coding sequences) of an eukaryotic gene called introns.

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43. ____ mature into large cells are called macrophages.
 a) Lymphocytes b) **monocytes** c) neutrophil d) Eosinophil
44. An ____ is represented by H_2L_2
 a) Antigen b) Immunogen c) **Antibody** d) Haptens
45. **The binding force between antigen and antibody is due to ____**
 1. Closeness between antigen and antibody
 2. non covalent bonds or inter molecular forces
 3. Affinity of antibody 4. Phagocytosis
 a) 1,4 b) 3,4 c) 2,4 d) **1,2,3**
46. **It is not live attenuated vaccines.**
 a) Measles b) Mumps c) **Salk's polio** d) Rubella
47. **Toxoid vaccines is DPT means.**
 1. Diphtheria 2. Pertussis 3. Tetanus 4. Palagia
 a) 1&2 above b) 3&4 c) 2&4 d) **1,2,3**
48. ____ and ____ some common examples of allergy
 a) AIDS and cholera b) Typhoid and cold
 c) **Hay fever and asthma** d) malaria and filaria
49. **Secondary immune deficiencies arise due to various reason, they are**
 1. Radiation 2. Use of cytolytic drugs
 3. Immuno suppressive drugs 4. infections
 a) 2&3 alone b) 1&2 alone c) 4 alone d) **all the above**
50. **Size of the HIV virus is ____**
 a) 100m b) **100-120nm** c) 100-140m d) 41-120nm
51. ____ is one of the strongest pain killer and is used during surgery.
 a) Charas b) Opioids c) ganja d) **Morphine**
52. ____ causes serious physical and psychological problems including hallucinations and paranoia
 a) morphine b) charas c) **Cocaine** d) opioids
53. **Are antibiotic used to treat common cold?**
 a) Yes b) **no** c) sometimes d) often
54. **The highest occurrence of Amoebiasis found in ____ organ**
 a) Kidney b) Lungs c) **Large Intestine** d) heart
55. **Most dangerous form of malaria cused by.**
 a) P.Vivax b) **P.Falciparum** c) P.Ovale d) P.Malariae
56. **Match the Following**
 i) Salmonella typhi - a) Lock jaw
 ii) Yersinia restis - b) Bacillary dysentery
 iii) Shigella species - c) enteric fever
 iv) Clostridium tetani - d) Black death
 a) i-a,ii-b,iii-c,iv-d b) i-d,ii-c,iii-b,iv-a c) **i-c,ii-d,iii-b,iv-a** d) i-a,ii-d,iii-b,iv-c

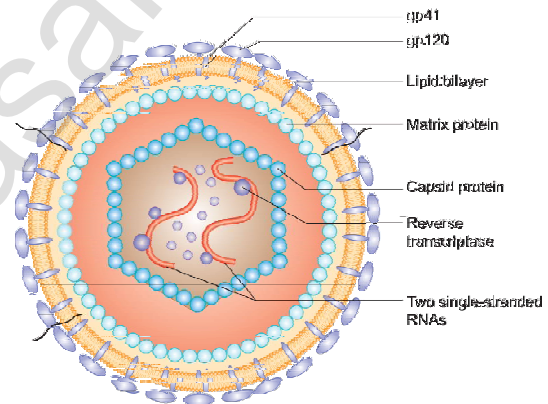
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5. Write the differences between primary immune and secondary immune.

Sl.No	Primary Immune Response	Secondary Immune Response
1	It occurs as a result of primary contact with an antigen.	It occurs as a result of second and subsequent contacts with the same antigen.
2	Antibody level reaches peak in 7 to 10 days.	Antibody level reaches peak in 3 to 5 days.
3	Prolonged period is required to establish immunity.	It establishes immunity in a short time.
4	There is rapid decline in antibody level.	Antibody level remains high for longer period.
5	It appears mainly in the lymph nodes and spleen.	It appears mainly in the bone marrow, followed by the spleen and lymph nodes.

6. Describe the structure of HIV with a diagram

- ❖ The human immunodeficiency virus belongs to the genus Lentivirus.
- ❖ HIV is a spherical virus, 100-120 nm in diameter, containing a dense core surrounded by a lipoprotein envelope. The envelope has glycoprotein (gp) spikes termed gp 41 and gp 120.
- ❖ At the core, there are two large single stranded RNA. Attached to the RNA are molecules of reverse transcriptase.
- ❖ It also contains enzymes like protease and ribonuclease.
- ❖ The core is covered by a capsid made of proteins. This is followed by another layer of matrix proteins.



7. Describe the structure of thymus.

- ❖ The thymus is a flat and bilobed organ located behind the sternum, above the heart.
- ❖ Each lobe of the thymus contains numerous lobules, separated from each other by connective tissue called septa.
- ❖ Each lobule is differentiated into an outer cortex and inner medulla.
- ❖ Outer cortex is densely packed with immature T cells called thymocytes.
- ❖ The inner medulla is sparsely populated with matured thymocytes.

8. Write short note on Ring worm.

- ❖ Ringworm is one of the most common fungal disease in humans.
- ❖ Appearance of dry, scaly lesions on the skin, nails and scalp are the main symptoms of the disease.
- ❖ Heat and moisture help these fungi to grow and makes them to thrive in skin folds such as those in the groin or between the toes.

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CHAPTER**8****MICROBES IN
HUMAN WELFARE****EVALUATION**

- Which of the following microorganism is used for production of citric acid in industries?
 - Lactobacillus bulgaris
 - Penicillium citrinum
 - Aspergillus niger
 - Rhizopus nigricans
- Which of the following pair is correctly matched for the product produced by them?
 - Acetobacter aceti - Antibiotics
 - Methanobacterium - Lactic acid
 - Penicillium notatum - Acetic acid
 - Saccharomyces cerevisiae - Ethanol
- The most common substrate used in distilleries for the production of ethanol is _____
 - Soyameal
 - Groundgram
 - Molasses
 - Corn meal
- Cyclosporin – A is an immunosuppressive drug produced from _____
 - Aspergillus niger
 - Manascus purpureus
 - Penicillium notatum
 - Trichoderma polysporum
- CO₂ is not released during
 - Alcoholic fermentation
 - Lactate fermentation
 - Aerobic respiration in animals
 - Aerobic respiration in plants
- The purpose of biological treatment of waste water is to _____
 - Reduce BOD
 - Increase BOD
 - Reduce sedimentation
 - Increase sedimentation
- The gases produced in anaerobic sludge digesters are
 - Methane, oxygen and hydrogen sulphide.
 - Hydrogen sulphide, methane and sulphur dioxide.
 - Hydrogen sulphide, nitrogen and methane.
 - Methane, hydrogen sulphide and CO₂.
- How is milk converted into curd? Explain the process of curd formation.
 - ❖ The LAB bacteria grows in milk and convert it into curd, thereby digesting the milk protein casein.
 - ❖ A small amount of curd added to fresh milk as a starter or inoculum contains millions of Lactobacilli, which under suitable temperature ($\leq 40^{\circ}\text{C}$) multiply and convert milk into curd.
 - ❖ Curd is more nutritious than milk as it contains a number of organic acids and vitamins.
- Give any two bioactive molecules produced by microbes and state their uses.
 - ❖ Streptokinase produced by the bacterium Streptococcus and genetically engineered Streptococci are used as "clot buster" for removing clots from the blood vessels of patients who have undergone myocardial infarction.

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- ❖ Production of insulin by recombinant DNA technology started in the late _____ - **1970s**
- ❖ In 1986 human insulin was marketed under the trade name _____ - **Humulin**
- ❖ _____ and _____ in 1921, isolated insulin from dog - **Best & Banting**
- ❖ Anti viral protein is _____ - **Interferon**
- ❖ Interferon is _____ in nature - **proteinaceous**
- ❖ Interferon stimulate to produce antiviral enzymes which inhibit _____ - **Viral replication**
- ❖ _____ vaccines are generally of uniform quality and less side effects as compared to the vaccines produced by conventional methods - **Recombinant vaccines**
- ❖ _____ vaccines are relatively easy and expensive to design and produce _____ - **DNA vaccines**
- ❖ Live vaccines are referred to as _____ - **Attenuated recombinant vaccines**
- ❖ Edible vaccines are prepared by _____ - **molecular pharming**
- ❖ Edible vaccines are _____ targeted vaccines - **Mucosal**
- ❖ Genetic immunization by using _____ - **DNA vaccines**
- ❖ Recombinant hepatitis B vaccine produced from _____ yeast - **Saccharomyces cerevisiae**
- ❖ The recombinant vaccine for hepatitis B (Hbs Ag) was first synthetic vaccine launched in _____ - **1997**
- ❖ The first Clinical gene therapy was given in _____ - **1990**
- ❖ Adenosine deaminase (ADA) deficiency otherwise called _____ - **SCID**
- ❖ Bone marrow transplantation method is essential for cure _____ disease - **SCID**
- ❖ _____ cells are capable of self renewal and exhibit cellular potency” - **Stem cells**
- ❖ _____ are undifferentiated cells found in most of the multi cellular animals - **stem cells**
- ❖ _____ stem cells are pluripotent and multipotent - **Embryonic (ES cells) stem cells**
- ❖ somatic stem cells otherwise called _____ - **Adult stem cells**
- ❖ ES cells are isolated from the _____ of the inner cell mass of a blastocyst - **Epiblast tissue**
- ❖ The _____ is a rich source of adult stem cells - **Red bone marrow**
- ❖ _____ is a important used diagnostic tool to determine if a person is HIV positive or negative - **ELISA**
- ❖ Polymerase chain reaction (PCR) technique was developed by _____ - **Kary mullis (1983)**
- ❖ In PCR, the denature the target DNA into single strands that will act as a _____ - **template for DNA synthesis**
- ❖ In PCR, _____ is otherwise called primer annealing - **renaturation**
- ❖ In PCR, _____ is otherwise called primer extension - **synthesis**
- ❖ mRNA converted to complementary DNA by the enzyme _____ - **reverse transcriptase**

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- 21. Transgenic animals have been very useful in**
 a) Biotechnological research b) Biomedical research
 c) Biological research d) **all the above**
- 22. Most popular sources of stem cells in cord blood banking.**
 a) Amniotic fluid b) Amniotic sac
 c) Placenta d) **Umbilical cord**
- 23. Identify the wrong pair.**
 a) ELISA - HIV antibodies
b) PCR technique - RNA replication
 c) Humulin - E.coli
 d) Interferons - Saccharomyces cervisiae
- 24. Find out the ODD ONE not related to molecular diagnostics**
 a) rDNA technology b) ELISA c) PCR d) **MRI scan**
- 25. Most of the adult stem cell are ___ and can act as a repair system of the body.**
 a) Pluripotent b) Totipotent c) **Multipotent** d) Oligopotent
- 26. Myeloid stem cells can differentiate into B and T cells but not RBC**
 a) Unipotency b) **Oligopotency** c) Totipotency d) Pleuripotency
- 27. Find the correct pair.**
 a) Totipotency - Single cell to produce a whole organism
 b) Unipotency - Stem cell differentiate into one cell type
 c) Oligopotency - Stem cell differentiate into few cell tupe
 d) Pluripotency - Stem cell differentiate into anykind of germ layers
 a) 1&2 b) 3&4 c) 2,3,4 d) **all the above**
- 28. In Pre-pro insulin ___ is removed after translation**
 a) Leader squnce b) C Chain c) **Both a & b** d) A & B polypeptide chain
- 29. The purpose of using enzyme in the ELISA test is _____**
 a) to show the antigen - antibody reation b) **to show the coloured product**
 c) to show the immobilised antigen d) to show the immobilised hepatic cell
- 30. Match the following**
 I. Stem cells - a) Pluripotency
 ii. GMO - b) Rosie
 iii. PCR - c) Finger printing
 iv. ELISA - d) HIV antibodies
 a) i-a,ii-b,iii-c,iv-d b) i-b,ii-d,iii-a,iv-c c) i-d,ii-c,iii-b,iv-a d) **i-a,ii-c,iii-b,iv-d**
- 31. ___ cells are immortal**
 a) **Embryonic stem cells** b) Adult stem cells c) pancreatic cells d) plasmid cells
- 32. ___ is an autosomal recessive metabolic disorder disease.**
 a) AIDS b) Syphilis c) Athlet's foot d) **SCID**
- 33. ___ laboratory techniques are indirect and not always specific.**
 a) microscopic examinations b) serum analysis c) urine analysis d) **all the above**

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- 29. Identify the wrong statements**
- Rapidly growing population will have more young individuals
 - A stable population will have various age classes
 - A declining population tends to have more older individuals
 - Rapidly growing population will have less young individuals.**
- 30. Find out the ODD ONE**
- Space
 - diseases**
 - shelter
 - weather
- 31. It is not intrinsic factors**
- Competition
 - Predation
 - emigration and immigration
 - diseases
 - weather**
- 32. Find the correct sequence in ascending order of population**
- Population → Community → species → biome
 - Community → Population → biome → Species
 - Biome → species → Community → Population
 - Species → Populaion → Community → biome.**
- 33. Pick out the Eurythermal organism**
- Tiger**
 - fish
 - Lizards
 - Frogs
- 34. Birds sitting on crocodile to eat insects is an example for**
- Amensalism
 - Commensalism
 - Competition
 - Mutualism**
- 35. Birds compete with squirrels for nuts and seeds is an example for _____**
- Predation
 - Competition**
 - Parasitism
 - Mutualism
- 36. i. Crocodile and bird a) Commensalism**
ii. Suckerfish on shark b) Parasitism
iii. Lion and deer c) Mutualism
iv. Tapeworm in human d) Predation
- i-a, ii-b, iii-c, iv-d
 - i-c, ii-a, iii-d, iv-b**
 - i-d, ii-c, iii-b, iv-a
 - i-d, ii-c, iii-a, iv-d
- 37. Identify the correct statement**
- Warm blooded animals, living in colder climates, have long limbs, ears
 - Eurythermal organism can survive narrow range temperature
 - Stenothermal organism can tolerate narrow range of temperatures
 - The birds and mammals attain greater body size in colder regions
- 38. _____ is one of the main agents in paedogenesis**
- Water**
 - Wind
 - Animals
 - all the above
- 39. _____ biome has long and cold winters**
- Taiga**
 - Tundra
 - Alpine
 - Grassland
- 40. _____ biome often they are characterized by high winds.**
- Taiga
 - Tundra
 - Alpine
 - Grassland**
- 41. where different species live together but do not affect each other**
- Neutral**
 - positive
 - Negative
 - none of these

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17. Sanctuaries.

Sanctuaries are tracts of land where wild animals and fauna can take refuge without being hunted or poached.

18. Gene banks

Gene banks are a type of biorepository which preserve genetic materials.

19. What are the two aspects of conservation of biodiversity?

1. In-situ conservation
2. Ex-situ conservation.

20. Name the two methods of in-situ conservation.

1. Wildlife sanctuaries
2. Biosphere reserve.

FOR CENTUM SCORERS

21. Name any two Exotic animal species introduced in India.

1. Tilapia fish
2. African apple snail.

22. List some of the factors that determine biodiversity distribution patterns.

Temperature, precipitation, distance from the equator altitude from sea level

23. When a species is considered as locally extinct?

A species is considered to be locally extinct when it is no longer found in an area it once inhabited but is still found elsewhere in the wild.

24. What is anthropogenic extinction?

Anthropogenic extinctions are abetted by human activities like hunting, habitat destruction, over exploitation, urbanization and industrialization.

25. How is said to be the species extinct in the wild?

If individuals of a species remain alive only in captivity or other human controlled conditions, the species is said to be extinct in the wild.

26. Functions of biosphere reserve.

Biosphere reserve are designated to deal with the conservation of biodiversity, economic and social development and maintenance of associated cultural values.

27. International union for conservation of nature (IUCN).

It is an organization working in the field of nature conservation and sustainable use of natural resources.

28. What is most serious aspect of the loss of biodiversity?

1. The most serious aspect of the loss of biodiversity is the extinction of species
2. The unique information contained in its genetic material(DNA) and the niche it possesses are lost forever.

29. Name the two endemic organisms of Western Ghats.

1. The grizzled squirrel
2. Lion tailed macaque

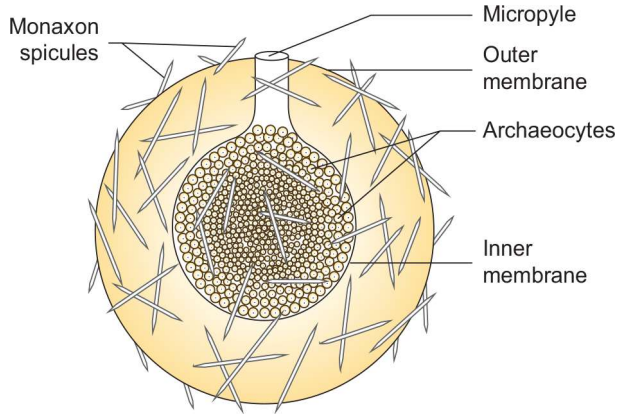
30. Alpha diversity :

It is measured by counting the number of taxa (usually species) within a particular area, community or ecosystem.

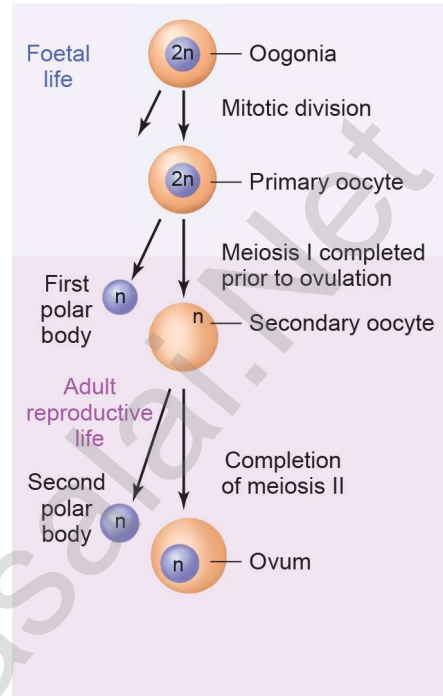
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Diagrams for Draw Labeled sketch

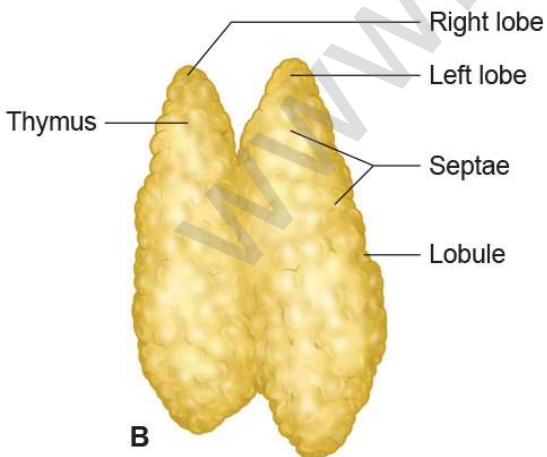
Gemmule



Oogenesis



Structure of Thymus



J and S - shaped growth curve

