

ENTRANCE EXAMINATION FOR ADMISSION, MAY 2013.

Ph.D. (ZOOLOGY)

COURSE CODE : 129

Register Number :

*Signature of the Invigilator
(with date)*

COURSE CODE : 129

Time : 2 Hours

Max : 400 Marks

Instructions to Candidates :

1. Write your Register Number within the box provided on the top of this page and fill in the page 1 of the answer sheet using pen.
2. Do not write your name anywhere in this booklet or answer sheet. Violation of this entails disqualification.
3. Read each of the question carefully and shade the relevant answer (A) or (B) or (C) or (D) in the relevant box of the ANSWER SHEET using HB pencil.
4. Avoid blind guessing. A wrong answer will fetch you -1 mark and the correct answer will fetch 4 marks.
5. Do not write anything in the question paper. Use the white sheets attached at the end for rough works.
6. Do not open the question paper until the start signal is given.
7. Do not attempt to answer after stop signal is given. Any such attempt will disqualify your candidature.
8. On stop signal, keep the question paper and the answer sheet on your table and wait for the invigilator to collect them.
9. Use of Calculators, Tables, etc. are prohibited.

1. The uptake of genes by the cells in animals is called
(A) Transfection (B) Transgenism
(C) Molecular farming (D) Embryo culture
2. Production of transgenic animals of commercial value such as livestock and fishes called
(A) Molecular cloning (B) Transgenesis
(C) Molecular farming (D) All the above
3. Coplementary DNA is produced from
(A) DNA dependtent RNA polymerase (B) DNA polymerase
(C) Reverse transcriptase (D) DNA helicase
4. One of the following is used to join the segments of DNA during genetic engineering
(A) Lipase (B) Ligase
(C) Gyrase (D) Helicase
5. The transfer of genetic material from one cell to another by a phage is called
(A) Transformation (B) Conjugation
(C) Transduction (D) Hybridization
6. A technique used to make numerous copies of a specific segment of DNA quickly and accurately is
(A) Translation (B) Trancription
(C) Ligase chain reaction (D) Polymerase chain reaction
7. The best method to protect genetic resources is
(A) Gene library (B) Cloning of animals
(C) Cryopreservation (D) Multiplication
8. The transgenic animals are those which have
(A) Foreign DNA in some of their cells (B) Foreign DNA in all of their cells
(C) Foreign RNA in all of their cells (D) Both (A) and (B)
9. Vectorless gene transfer includes
(A) Particle gun (B) Microinjection
(C) Electroporation (D) All the above

10. The enzyme which converts the cohesive ends of a single stranded DNA fragment into blunt ends
- (A) Alkaline phosphatase (B) Reverse transcriptase
(C) SI enzyme (D) Exonucleases
11. Recent techniques used for separating fragment of DNA is
- (A) Northern blotting (B) Southern blotting
(C) Eastern blotting (D) Western blotting
12. Transgenic fishes which are poorly adapted for survival in the wild but exhibit mating advantages is called
- (A) Trojan gene effect (B) Purge effect
(C) Spread effect (D) Exotic effect
13. The genes transferred into fish include
- (A) Salmon or rainbow trout growth hormone
(B) Winter flounder freeze protein
(C) Chicken -delta crystalline protein
(D) All the above
14. What is the name for mobile genetic elements?
- (A) Plasmids (B) Pili
(C) Barr body (D) Transposons
15. The bacterium involved to clear up oil spill is
- (A) Pseudomonas (B) E. coli
(C) Streptomyces (D) Bacillus
16. Production of monoclonal antibodies was discovered by
- (A) Barbara Meclintock (B) Hebert Bayer
(C) Mertz and Davis (D) Alecs Jeffery
17. Which of the following commonly known as a fresh water grey mullet?
- (A) Notopterus (B) Mugil coraula
(C) Clarius (D) Mastocembelus
18. Which of the following fishes has poisonous pectoral fins?
- (A) Clarias (B) Channa
(C) Heteropneustes (D) Mystus

19. Fringed lower lip is a characteristic features of
 (A) *Catla catla* (B) *Labeo rohita*
 (C) *Cirrhina mrigala* (D) *Wallago attu*
20. Brackish water fishes were
 (A) Grey mullet and Sea bass (B) *Chanos chanos*
 (C) Pearl spots (D) All the above
21. The supplementary feeding required to an adult fish per day is
 (A) 2% of its body weight (B) 1.55% of its body weight
 (C) 1% of its body weight (D) 0.5% of its body weight
22. This is considered as the tastiest fish among carps
 (A) *Catla catla* (B) *Labeo rohita*
 (C) *Cirrhina mrigala* (D) *Wallago attu*
23. The two major factors that govern the productivity of a fish culture pond are
 (A) Feed and water quantity (B) Number of fish and water quality
 (C) Feed and water quality (D) Feed and medicine
24. Rohu fish belongs to
 (A) Surface feeder (B) bottom feeder
 (C) Column feeder (D) Air feeder
25. The standard combination of NPK recommended for fresh water pond for fish farming is
 (A) 18:10:4 (B) 10:8:4
 (C) 4:10:18 (D) 10:20:18
26. The pH of the water in a fish culture pond is
 (A) 6.5-7.5 (B) 6.5-8.5
 (C) 6.5-9 (D) 6.5-7
27. The percentage of carbohydrate required in artificial fish feed is
 (A) 30-40% (B) 40-50%
 (C) 50-60% (D) 60-70%

28. Which of the following gives high quality pearl?
 (A) *Placuna margaritifera* (B) *Pinctada roding*
 (C) *Pinctada vulgaris* (D) *Pinctada anamioides*
29. The protein content of fish is
 (A) 10%-15% (B) 15%-30%
 (C) 13%-20% (D) 20%-50%
30. Which of the following is the largest sea prawn found in India?
 (A) *Penaeus indicus* (B) *Metapenaeus dobsoni*
 (C) *Penaeus monodon* (D) *Palaemon tenuipes*
31. Nursery ponds are _____ in nature
 (A) Deep (B) Very deep
 (C) Shallow (D) Moderate shallow
32. Young ones of rohu and mrigal feeds on
 (A) Phyto plankton (B) Zoo plankton
 (C) Aquatic plants (D) Plant debris
33. The vitamins found in fish are
 (A) Vitamin C and Vitamin D (B) Vitamin B and Vitamin D
 (C) Vitamin A and Vitamin D (D) Vitamin A and Vitamin B
34. The chemical spread over the bottom of the pond to remove the acidity and kill the soli organism is
 (A) Calcium hydroxide (B) Calcium carbonate
 (C) Calcium nitrate (D) Poultry manure
35. The dorsal fin of Rohu fish has
 (A) 11 to 12 branched rays (B) 9 to 10 branched rays
 (C) 12 to 13 branched rays (D) 8 to 9 branched rays
36. Name of the fatty acids helpful in cholesterol regulation and promoting cardiac health
 (A) Poly saturated fatty acids (B) Poly unsaturated fatty acids
 (C) Saturated fatty acids (D) Unsaturated fatty acids
37. The strategy of storing CO_2 and its compound some where at safe place is called is
 (A) Carbon sequestration (B) Carbonification
 (C) Cabonization (D) Carbondioxide store

38. If green house effects does not exists
- (A) Earth temperature will increase
 - (B) Earth will be cooled
 - (C) Global warming will occur
 - (D) Earth temperature remain unaltered
39. One of the following is a Freon gas
- (A) Trifluoromethyl
 - (B) Trichlorofluorocarbon
 - (C) Difluoromethyl
 - (D) Chlorofluorocarbons
40. The absence of decomposers, ecosystem functioning is adversely affected due to
- (A) Blocking of energy flow
 - (B) Blocking of mineral cycling
 - (C) Blocking of solar energy to herbivores
 - (D) Rate of other composition will increase.
41. Which ecosystem has the highest primary productivity?
- (A) Pond ecosystem
 - (B) Lake ecosystem
 - (C) Grassland ecosystem
 - (D) Forest ecosystem
42. Niche of a species in an ecosystem refer to its
- (A) Place of occurrence
 - (B) Competitive ability
 - (C) Centre of origin
 - (D) Function at the place of occurrence
43. When population is allowed to grow in a limited environment, it shows
- (A) Exponential growth
 - (B) Logistic growth
 - (C) Unlimited growth
 - (D) None of these
44. The conversion of nitrate to nitrous oxide and nitrogen gas is termed as
- (A) Nitrification
 - (B) Denitrification
 - (C) Nitrogen fixation
 - (D) None of these
45. In the profundal zone
- (A) There is no photosynthetic activity
 - (B) No animal is found
 - (C) Maximum photosynthesis
 - (D) Dark bottom

46. In India coniferous forests are found in
 (A) Madhya Pradesh (B) Himalayan region
 (C) Satpura hills (D) Rajasthan
47. What is eco-freeze?
 (A) Halting ecological degradation
 (B) Stopping ecological disaster
 (C) Planning an ecological balance
 (D) Stopping the manufacture of environment modification weapons
48. Where is the International Environment Information centre located?
 (A) Melbourne (B) Newyork
 (C) Bonn (D) Frankfurt
49. Which of the following animal has become extinct in India?
 (A) Asiatic lion (B) Snoe leopard
 (C) Cheetah (D) Rhinoceros
50. High level radio active wastes are stored in
 (A) Deep underground storage (B) Deep well injection
 (C) Surface impoundments (D) Incineration
51. The areas characterized by high concentration of endemic species and unusually rapid rate of habit modification loss are called
 (A) Key spots (B) Key stones
 (C) Hot stones (D) Hot spots
52. The cheapest and reliable source of all renewable souce of energy?
 (A) Mini hydel (B) Geothermal
 (C) Wind (D) Solar
53. The gobar gas plants are based on the process called
 (A) Fermentation (B) Aerobic fermentation
 (C) Anaerobic fermentation (D) Nitration
54. The convention of Biodiversity consists of
 (A) 45 articles (B) 42 articles
 (C) 52 articles (D) 75 articles

55. The solar cells contain both poisonous and a possible carcinogenic substance called
 (A) Cadmium (B) Radium
 (C) Thorium (D) Uranium
56. Excessive inhalation of manganaes causes
 (A) Anemia (B) Diphtheria
 (C) Pneumonia (D) Gout
57. Of the following elements, which one is a carcinogen?
 (A) Arsenic (B) Gold
 (C) Calcium (D) All the above
58. Cold burning in houses produce one of the most hazardous gases
 (A) Sulphur dioxide (B) Carbon dioxide
 (C) Carbon monoxide (D) Hydrogen sulphide
59. The term "Over kill" deals with
 (A) Pesticide poisoning (B) Soil erosion
 (C) Nuclear holocaust (D) Global warming
60. Methenoglobinemia occurs in infants and farm animals by poisoning of
 (A) Phosphate (B) Nitrite
 (C) Sulphate (D) Carbonate
61. Air pollutants enter the body through
 (A) Respiratory system (B) The digestive system
 (C) The excretory system (D) All the above
62. The most common indicator organism that represent polluted water is
 (A) E.coli (B) Entamoeba
 (C) C. vibrio (D) P. typhi
63. Which part of the human body is much affected by nuclear radiation?
 (A) Brain (B) Liver
 (C) lungs (D) bone marrow
64. Xenobiotics are dealt with in the liver by a process called
 (A) Bioexcretion (B) Biotreatment
 (C) Bioconversion (D) Biotransformation
65. Which of the following concentration of Ozone in ambient air is considered good?
 (A) upto 0.06 ppm (B) upto 0.12 ppm
 (C) upto 0.20 ppm (D) more than 0.20 ppm

66. Which of the following is more toxic?
- (A) Organochlorine insecticides (B) Organophosphates insecticides
(C) Fumigant insecticides (D) Disinfectants
67. Which of the following forms of high energy radiation are most penetrating and dangerous?
- (A) Alpha particles (B) Beta particles
(C) Neutrons (D) All of them
68. Toxicant involving a stimulus ,severe enough to bring about a response speedily ,with in four days is called
- (A) Chronic toxicity (B) Lethal toxicity
(C) Acute toxicity (D) Sublethal concentration
69. In food monosodium glutamate is used as a
- (A) Colouring agent (B) Antioxidant
(C) Stabilizer (D) Flavor enhancer
70. Which compounds causes the ozone hole in Antartic area?
- (A) Chlorine and iodine (B) Chlorine and carbon
(C) Bromine and chlorine (D) Bromine and carbon
71. When subjected to thyroidectomy, or if the pond water contains no iodine, a tadpole of frog will
- (A) Die soon (B) Turn into dwarf frog
(C) Grow into giant frog (D) Remain tadpole throughout life
72. In several vertebrates ,an increase in BP, volume of blood ,formation of glycogen and rate of heart beat caused by the hormone
- (A) Thyroxine (B) Gastrin
(C) Adrenaline (D) Secretin
73. Gonadotrophic hormone are produced by
- (A) Adenohypophysis (B) Neurohypophysis
(C) Adrenal cortex (D) Thyroid
74. Thyroid gland of vertebrates is considered to be homologues to the following part of the lower chordates
- (A) Nerve cord (B) Endostyle
(C) Neural gland (D) Pharyngeal gill pouches

75. Vasopression is related with
 (A) Concentration (B) Fast digestion
 (C) Slow heart beat (D) Slow respiration
76. Which hormone governs and plays a key role in carbohydrate metabolism?
 (A) Glucocorticoides (B) Insulin
 (C) Thyroxine (D) All of these
77. Names of which set are used for a single hormone
 (A) Secretin, Gastrin and enterokinin (B) Thyroxin, oxytocin and secretin
 (C) Testosterone, LTH and GTH (D) ADH, vasopression and pitressin
78. Whose secretion is not under control of pituitary?
 (A) Thyroid (B) Testis
 (C) Adrenal medulla (D) Adrenal cortex
79. Secretion of androgens by testes regulated by
 (A) Oxytocin (B) Leuteotrophic hormone
 (C) FSH (D) Luteinizing hormone
80. The role of progesterone hormone is
 (A) To thicken Uterine wall
 (B) To increase blood supply to uterine wall
 (C) To bulild up fat and glycogen in uterine wall
 (D) All of these
81. Life saving hormones secreted by
 (A) Hypophysis (B) Pineal
 (C) Adrenal (D) Thyroids
82. Structure involved in Addisons disease is
 (A) Adrenal medulla (B) Adrenal cortex
 (C) Thyroid (D) Parathyroid
83. Hormone that stimulates contraction of gall bladder
 (A) Secretin (B) Gastrin
 (C) Glucagon (D) Cholecystokinin

84. Hormone which helps in implantation of embryo in uterus
 (A) Progesterone (B) Relaxin
 (C) Estrogen (D) Thyroxine
85. Receptors of protein hormones are located
 (A) In cytoplasm (B) On cell surface
 (C) In nucleus (D) On endoplasmic reticulum
86. Which endocrine gland stores its secretion in extra cellular space before discharging it into the blood?
 (A) Pancreas (B) Adrenal
 (C) Testis (D) Thyroid
87. Technique used for estimation of minute amounts of hormones and drugs is called
 (A) Fractionation (B) Radio immuno assay
 (C) Electrophoresis (D) Electrencephalogram
88. After ovulation ,the empty follicle is transformed into a transitory endocrine gland called
 (A) Corpus luteum (B) Progesterone
 (C) Oestrogen (D) Corpus albicans
89. The primary egg membrane surrounds the ovum is
 (A) Zona pellucida (B) Zona radiata
 (C) Corona pellucida (D) Corona radiata
90. Which of the following hormone is called master hormone?
 (A) Oxytocin (B) Thyroxine
 (C) Melatonin (D) Progesterone
91. Which hormone is produced in a women if pregnancy has occurred?
 (A) Estrogen (B) Chorionalgonadotropin
 (C) Progesterone (D) LH
92. At menophase ,there is a rise in urinary excretion of
 (A) STH (B) FSH
 (C) LTH (D) MSH

93. For an effective production of spermatozoa, the temperature of testes should be maintained at
- (A) 30° C (B) 32° C
(C) 36° C (D) 38° C
94. Which among the following interrelated in testicular function?
- (A) Hypothalamus (B) Anterior pituitary
(C) Testis (D) All the above
95. Oestrogens are secreted by the
- (A) Theca interna of the ovum (B) Cells of graffian follicle
(C) Corpus luteum and placenta (D) All the above
96. Duration of luteal phase is between
- (A) 5th day-14th day (B) 15-28th day
(C) 1-5th day (D) 28th day
97. Hormone used to hasten delivery under special circumstances
- (A) Progesterone (B) Estrogen
(C) Progestin (D) Oxytocin
98. Amniotic fluid protects the foetus from
- (A) Degeneratin (B) Jerks
(C) Encystment (D) None of the above
99. Increased fetal cortisol just before birth results in
- (A) Uterine contractions (B) Release of oxytocin
(C) Placental steroid biogenesis (D) Fetal lung maturation
100. Hormone which stimulates the "let down" release of milk from mothers breasts when the baby is sucking is
- (A) Oxytocin (B) Prolactin
(C) Progesterone (D) Relaxin