

ZOOLOGY DAILY ANSWER WRITING PROGRAMME

Improve your Answer writing expression in matured manner over the Practice of more than 40 to 48 trial Test. Identify your mistakes & rectify solutions for those deviations in your preparation.

Test No	Syllabus / Subjects / Topics
	Economic Zoology:
1	<ul style="list-style-type: none"> • Apiculture, sericulture, lac culture, carp culture, pearl culture, prawn culture, vermiculture.
2	<ul style="list-style-type: none"> • Major infectious and communicable diseases (malaria, filaria, tuberculosis, cholera and AIDS) their vectors, pathogens and prevention.
3	<ul style="list-style-type: none"> • Cattle and livestock diseases, their pathogen (helminthes) and vectors (ticks, mites, Tabanus, Stomoxys). • Pests of sugar cane (Pyrilla perpusiella) oil seed (Achaea janata) and rice (Sitophilus oryzae).
4	<ul style="list-style-type: none"> • Transgenic animals. • Forensic biotechnology. • Medical biotechnology, human genetic disease and genetic counselling, gene therapy.
	Ecology:
5	<ul style="list-style-type: none"> • Biosphere: Concept of biosphere; biomes, Biogeochemical cycles, Human induced changes in atmosphere including green house effect, ecological succession, biomes and ecotones, community ecology.
6	<ul style="list-style-type: none"> • Concept of ecosystem; structure and function of ecosystem, types of ecosystem, ecological succession, ecological adaptation.
7	<ul style="list-style-type: none"> • Population; characteristics, population dynamics, population stabilization.(d) Biodiversity and diversity conservation of natural resources. • Wildlife of India.
8	<ul style="list-style-type: none"> • Remote sensing for sustainable development. • Environmental biodegradation, pollution and its impact on biosphere and its prevention.

	Biostatistics:
9	<ul style="list-style-type: none"> • Designing of experiments; null hypothesis; correlation, regression
10	<ul style="list-style-type: none"> • distribution and measure of central tendency, chi square, student-test, F-test (one-way & two-way F-test).
	Instrumentation Methods:
11	<ul style="list-style-type: none"> • Spectrophotometer, phase contrast and fluorescence microscopy, radioactive tracer, ultra centrifuge,
12	<ul style="list-style-type: none"> • gel electrophoresis, PCR, ELISA, FISH and chromosome painting. • Electron microscopy (TEM, SEM).
	Developmental Biology:
13	<ul style="list-style-type: none"> • Gametogenesis; spermatogenesis, composition of semen, in vitro and in vivo capacitation of mammalian sperm, Oogenesis, totipotency;
14	<ul style="list-style-type: none"> • fertilization, morphogenesis and morphogen, blastogenesis, establishment of body axes formation, fate map, gastrulation in frog and chick; genes in development in chick, homeotic genes, development of eye and heart, placenta in mammals.
15	<ul style="list-style-type: none"> • Cell lineage, cell-to cell interaction, Genetic and induced teratogenesis, role of thyroxine in control of metamorphosis in amphibia, paedogenesis and neoteny, cell death, aging.
16	<ul style="list-style-type: none"> • Developmental genes in man, in vitro fertilization and embryo transfer, cloning. • Stem cells: Sources, types and their use in human welfare. • Biogenetic law.
	Biochemistry:
17	<ul style="list-style-type: none"> • Structure and role of carbohydrates, fats, fatty acids and cholesterol, proteins and amino-acids, nucleic acids. Bioenergetics.
18	<ul style="list-style-type: none"> • Glycolysis and Krebs cycle, oxidation and reduction, oxidative phosphorylation, energy conservation and release, ATP cycle, cyclic AMP – its structure and role
19	<ul style="list-style-type: none"> • Hormone classification (steroid and peptide hormones), biosynthesis and functions. • Enzymes: types and mechanisms of action. • Vitamins and co-enzymes • Immunoglobulin and immunity.
	Genetics:
20	<ul style="list-style-type: none"> • Modern concept of gene, split gene, genetic regulation, genetic code.

	<ul style="list-style-type: none"> Sex chromosomes and their evolution, sex determination in Drosophila and man.
21	<ul style="list-style-type: none"> Mendel's laws of inheritance, recombination, linkage, multiple alleles, genetics of blood groups, pedigree analysis, hereditary diseases in man. Mutations and mutagenesis.
22	<ul style="list-style-type: none"> Recombinant DNA technology; plasmid, cosmid, artificial chromosomes as vectors, transgenic, DNA cloning and whole animal cloning (principles and methods). Gene regulation and expression in prokaryotes and eukaryotes.
23	<ul style="list-style-type: none"> Signal molecules, cell death, defects in signaling pathway and consequences. RFLP, RAPD and AFLP and application of RFLP in DNA fingerprinting, ribozyme technologies, human genome project, genomics and proteomics.
	Cell Biology:
24	<ul style="list-style-type: none"> Structure and function of cell and its organelles (nucleus, plasma membrane, mitochondria, Golgi bodies, endoplasmic reticulum, ribosomes, and lysosomes), cell division (mitosis and meiosis), mitotic spindle and mitotic apparatus,
25	<ul style="list-style-type: none"> chromosome movements, chromosome type polytene and lambrush, organization of chromatin, heterochromatin, Cell cycle regulation.
26	<ul style="list-style-type: none"> Nucleic acid topology, DNA motif, DNA replication, transcription, RNA processing, translation, protein foldings and transport.
	Evolution:
27	<ul style="list-style-type: none"> Theories of origin of life. Theories of evolution; Natural selection, role of mutations in evolution, evolutionary patterns, molecular drive, mimicry, variation, isolation and speciation.
28	<ul style="list-style-type: none"> Evolution of horse, elephant and man using fossil data. Hardy-Weinberg Law. Continental drift and distribution of animals.
	Physiology (with special reference to mammals):
29	<ul style="list-style-type: none"> Composition and constituents of blood; blood groups and Rh factor in man, factors and mechanism of coagulation, iron metabolism, acid-base balance, thermo-regulation, anticoagulants.

30	<ul style="list-style-type: none"> • Haemoglobin: Composition, types and role in transport of oxygen and carbon dioxide. • Digestion and absorption: Role of salivary glands, liver, pancreas and intestinal glands.
31	<ul style="list-style-type: none"> • Excretion: nephron and regulation of urine formation; osmo-regulation and excretory product • Muscles: Types, mechanism of contraction of skeletal muscles, effects of exercise on muscles.
32	<ul style="list-style-type: none"> • Neuron: nerve impulse – its conduction and synaptic transmission, neurotransmitters. • Vision, hearing and olfaction in man. • Physiology of reproduction, puberty and menopause in human.
Ethology:	
33	<ul style="list-style-type: none"> • Behaviour: Sensory filtering, responsiveness, sign stimuli, learning and memory, instinct, habituation, conditioning, imprinting.
34	<ul style="list-style-type: none"> • Role of hormones in drive; role of pheromones in alarm spreading; crypsis, predator detection, predator tactics, social hierarchies in primates, social organization in insects.
35	<ul style="list-style-type: none"> • Orientation, navigation, homing, biological rhythms, biological clock, tidal, seasonal and circadian rhythms. • Methods of studying animal behaviour including sexual conflict, selfishness, kinship and altruism.
Systematics:	
36	<ul style="list-style-type: none"> • Zoological nomenclature, international code, cladistics
37	<ul style="list-style-type: none"> • Molecular taxonomy and biodiversity.
Non-chordata and Chordata:	
38	<ul style="list-style-type: none"> • Classification and relationship of various phyla up to subclasses: Acoelomate and Coelomate, Protostomes and Deuterostomes, Bilateria and Radiata; Status of Protista, Parazoa, Onychophora and Hemichordata; Symmetry.
39	<ul style="list-style-type: none"> • Protozoa: Locomotion, nutrition, reproduction, sex; General features and life history of Paramecium, Monocystis, Plasmodium and Leishmania. • Porifera: Skeleton, canal system and reproduction.
40	<ul style="list-style-type: none"> • Cnidaria: Polymorphism, defensive structures and their mechanism; coral reefs and their formation; metagenesis; general features and life history of Obelia and Aurelia.

	<ul style="list-style-type: none"> • Platyhelminthes: Parasitic adaptation; general features and life history of Fasciola and Taenia and their pathogenic symptoms.
41	<ul style="list-style-type: none"> • Nematelminthes: General features, life history, parasitic adaptation of Ascaris and Wuchereria. • Annelida: Coelom and metamerism; modes of life in polychaetes; general features and life history of Nereis, earthworm and leech.
42	<ul style="list-style-type: none"> • Arthropoda: Larval forms and parasitism in Crustacea; vision and respiration in arthropods (Prawn, cockroach and scorpion); modification of mouth parts in insects (cockroach, mosquito, housefly, honey bee and butterfly); metamorphosis in insect and its hormonal regulation, social behaviour of Apis and termites. • Mollusca: Feeding, respiration, locomotion, general features and life history of Lamellidens, Pila and Sepia, torsion and detorsion in gastropods.
43	<ul style="list-style-type: none"> • Echinodermata: Feeding, respiration, locomotion, larval forms, general features and life history of Asterias. • Protochordata: Origin of chordates; general features and life history of Branchiostoma and Herdmania.
44	<ul style="list-style-type: none"> • Pisces: Respiration, locomotion and migration. • Amphibia: Origin of tetrapods, parental care, paedomorphosis. • Reptilia; Origin of reptiles, skull types, status of Sphenodon and crocodiles. • Aves: Origin of birds, flight adaptation, migration.
45	<ul style="list-style-type: none"> • Mammalia: Origin of mammals, dentition, general features of egg laying mammals, pouched-mammals, aquatic mammals and primates, endocrine glands (pituitary, thyroid, parathyroid, adrenal, pancreas, gonads) and their interrelationships. • Comparative functional anatomy of various systems of vertebrates (integument and its derivatives, endoskeleton, locomotory organs, digestive system, respiratory system, circulatory system including heart and aortic arches, urino-genital system, brain and sense organs (eye and ear).
46 to 49	Comprehensive Papers, 2 for each for papers

Features of Test Series:

- ✓ 45 Topic wise Test (Question cum answer spacing format exam)
- ✓ 4 Comprehensive Test
- ✓ Evaluation & Detailed feedback.
- ✓ One to one Interaction for every student for rectifying your mistakes in answer writing framework.

Note: The Dates of Examinations are Liable to Alteration, if the Circumstances so Warrant.

So I hope that this Mains Test Series Programme will help conceptually for your UPSC mains preparation. For more details please contact office.

With All The Best. Jai Hind!!!

KAVERI'S IAS