

RAJASTHAN PUBLIC SERVICE COMMISSION, AJMER

Syllabus for Screening Test for the Post of Assistant Agriculture Research Officer (Entomology) Agriculture Department

Taxonomy: Classification of insects upto orders and suborders.

Insect Morphology: Insect head, thorax, abdomen and their appendages.

Insect Anatomy: Structure and modification of different systems – digestive, circulatory, respiratory, excretory, nervous, sensory, reproductive, musculature- movement and flight and endocrine system.

Definition and Basic Concepts of Insect Ecology : Abundance and diversity of insects, Study of abundance and distribution of insects. Basic principles of abiotic factors and their generalized action on insects. Implications for abundance and distribution of insects. Law of Minimum, Law of Tolerance and biocoenosis, Intra – and Interspecific relationship.

Toxicology: Principles, Bioassay; joint action of insecticides- synergism, potentiation and antagonism; factors affecting toxicity of insecticides; insecticide compatibility, selectivity and phytotoxicity.

Insecticide residues, their significance and environmental implications. Insecticide Act, registration and quality control of insecticides: safe use of insecticides; diagnosis and treatment of insecticide poisoning.

Classification of Insecticides: Classification on the basis of mode of entry, mode of action and chemical nature. Mode of action of Chlorinated Hydrocarbons, Organophosphates, Carbamates, Pyrethroids, Neonicotinoids, Insect growth regulators, microbials, botanicals, new promising compounds.

Integrated Pest Management: Definition, Principles Components of IPM- Legislative, cultural, physical, mechanical host plant resistance and chemical methods; pest survey and surveillance, forecasting, types of surveys.

Biological Control: Definition, principles and scope of biological control; important groups of parasitoids, predators and pathogens. Importation, augmentation and conservation of natural enemies. Microbial control of insect pests.

Insect Pests and their Management: Polyphagous pests- grasshoppers, locusts, termites, white grubs, hairy caterpillars; Non-insect pests (mites, birds, rodents, snails and slugs).

Insect pests of cereals, millets, pulses, and oilseeds.

Insect pests of fibre crops, forages, sugarcane and tobacco.

Insect pest of fruit crops- mango, guava, banana, papaya, pomegranate, grapes, ber, fig, citrus and aonla.

Insect pests of vegetable crops- tomato, potato, radish, carrot, beetroot, cole crops, french beans, brinjal, okra, all gourds and leafy vegetables.

Insect pests of chillies, tumeric, ginger, beetlevine.

Important pests of stored grains and their management.

Important mites, birds and rodent pests of agricultural importance and their management.

Plant protection Organizations of India.

Social insects : Termites and Honey bee.

Beneficial Insects : Silk worm, Honey bee and Lac Insects.

Embryology of Insects: Embryonic development and Metamorphosis of Insects.

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Pattern of Question Papers:

1. Objective Type Paper
2. Maximum Marks : 100
3. Number of Questions : 100
4. Duration of Paper : Two Hours
5. All Questions carry equal marks
6. There will be Negative Marking

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