

Devi Ahilya Vishwavidyalaya Indore (M.P.)

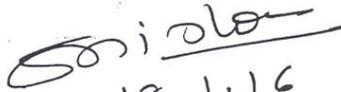
Session (सत्र) ~~2014-2015~~ से लागू

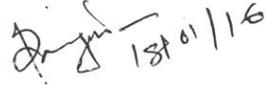
2016-17

B.Sc. Seed Technology

Semester System

Course No.	Name of the Course	Total
I Sem	Principal of Seed Technology	85 + CCE 15 = 100
II Sem	Seed Production	85 + CCE 15 = 100
III Sem	Plant breeding	85 + CCE 15 = 100
IV Sem	Seed Testing and Certification	85 + CCE 15 = 100
V Sem	Seed Pathology and Entomology	85 + CCE 15 = 100
VI Sem	Seed Processing]storage and marketing	85 + CCE 15 = 100
VI Sem	Project Work as per direction of Higher Education	50


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Devi Ahilya Vishwavidyalaya Indore (M.P.)

Syllabus ²⁰¹⁶⁻¹⁷ ~~2014-2015~~ - Onwards

ACCORDING TO NEW PATTERN OF DEPT. OF HIGHER EDU. OF MP.

B.Sc. I Semester, Seed Technology

Paper - I, Principles of Seed Technology

Maximum Marks : 85

Unit I

1. History. Concept and aim of seed Technology.
2. Seed Definition, Types, Characteristics of good seed. Difference Between seed and Grain
3. Seed development programme
 - a) Basis for seed programme .
 - b) Types of seed programme
 - c) National seed programme
4. Role of following agencies in the development of Indian seed Industry.
 - a) National seed Corporation. (NSC)
 - b) Tarai Development Corporation (TDC)
 - c) State farm Corporation (SFC)

UNIT-II

1. Structure of flower.
2. Microsporangium, Microsporogenesis and Development of male gametophyte.
3. Megasporangium, Megasporogenesis and Development of female gametophyte (polygonum Type)
4. Pollination, Fertilization and Apomixes.
5. Development of Dicot and Monocot Embryo, Type of Endosperm, types of fruit.

Unit-III

1. Structure of Monocot Seed , Maize and wheat stru. dicot seeds - Pea, Gram, Soyabean and Castor.
2. Difference Between Dicot and Monocot Seed.
3. Chemical Composition of seeds.
4. Seed Dormancy-Types. Causes. Methods of Breaking Dormancy. Advantages and disadvantages.
5. Seed Deterioration -Symptoms and Causes.

UNIT-IV

1. Seed Germination - Pattern types and Basic requirements for germination.
2. Normal and abnormal Seedlings
3. Germination inhibitors
4. Metabolism of storage products during germination.

UNIT-V

1. Plant tissue culture General procedure and its importance in agriculture.
2. Synthetic seeds-method of preparation and Importance.
3. Terminator seeds, Terminators Technology and Advantages and disadvantages.

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Syllabus ~~2014-2015~~ 2016-17
ACCORDING TO NEW PATTERN OF DEPT. OF HIGHER EDU. OF MP.
B.Sc. II Semester, Seed Technology
Paper – Seed Production

Maximum Marks : 85

Unit I

1. General principles and methods of seed production .
2. Maintenance of Breeder's seed.
 - a) Methods in self fertilized crops.
 - b) Methods in cross fertilized crops
3. Development, trial and release of variety .
4. Methods of seed production for Cereals and Pulses .
 - i) Wheat ii) Gram
 - iii) Maize iv) Soybean

Unit II

- Methods of seed production for Vegetables and Oils seeds.
- i) Tomato ii) Potato iii) Onion
 - iv) Ground nut v) Mustard vi) Sunflower

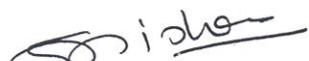
Unit III

- Methods of seed production for fibers, Sugars and Forage.
- i) Cotton ii) Jute iii) Sugarcane
 - iv) Sugarbeet v) Berseem vi) Lucerne

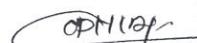
Unit IV

Study of the following families with special reference ^{to} the seed structure
floral structure and Economic Importance

- i) Brassicaceae ii) Asteraceae
- iii) Malvaceae iv) Solanaceae


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vi) Fabaceae

vi) Poaceae

Unit V

1. Weeds characteristics, classification, crop weed competition, Losses and Benefit and weeds control.

2. Study of weeds of Kharif and Rabi crops

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|--------------------------|-------------------------------|
| i) Ageratum conyzoides | vii) Chenopodium album |
| ii) Amaranthus viridis | viii) cuscuta reflexa |
| iii) Argemone maxicana | ix) cynodon dactylon |
| iv) Celosia argentea | x) Eclipta alba |
| v) Euphorbia hirta | xi) Oxalis corniculata |
| vi) Solanum xanthocarpum | xii) Parthenium hysterophorus |

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ACCORDING TO NEW PATTERN OF DEPT. OF HIGHER EDU. OF MP.

B.Sc. III Semester, Seed Technology

Paper- Plant breeding

Maximum Marks : 85

Unit-I

1. Plant Breeding-Introduction, Objectives, Activities and important achievements.
2. Modes of pollination in crop plants-
self-pollination-cross-pollination.
Factors promoting self-pollination.
Factors promoting cross-pollination.
3. Self incompatibility-Definition-types, methods induction & application
4. Male sterility-Definition, types, methods, induction & application.

Unit-II

1. Germplasm & its conservation- Introduction, Germplasm collection, centre of origin & diversity.
2. Seed banks & types of seed collection.
3. Plant Introduction-Definition-Types, procedure, merits & demerits.
4. Selection -Definition, Types, Methods, merits and demerits.

Unit-III

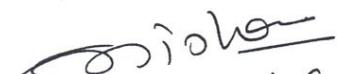
1. Hybridization-Definition, objectives and types.
2. Techniques of Hybridization-(1) Selection evaluation of parents (2) Emasculation (3) Bagging and Tagging (4) pollination (5) Collection and storage of F1 seed (6) Growing of F1 generation.
3. Improvement in self pollinated crops through hybridization application.
4. Procedure merits & demerits and achievements of pedigree methods.
5. Procedure merits & demerits and achievements of bulk methods.

Unit-IV

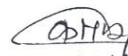
1. Heterosis- Definition types & basis.
2. Use of heterosis in crop improvements.
3. Hybrid, synthetic and Composite Varieties.
4. Mutation Breeding -Mutagens, procedure, Precautions, application, achievements.

Unit-V

1. Plant Breeding for disease resistance-Procedure, Precaution & achievements.
2. Plant Breeding for insect resistance-procedure, precaution & achievements
3. Plant Breeding work done in following crops-
-Wheat-Maize-Rice-Cotton-Potato-Sugarcane


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ACCORDING TO NEW PATTERN OF DEPT. OF HIGHER EDU. OF MP.

B.Sc. IV Semester, Seed Technology
Paper – Seed Testing and Certification

Maximum Marks : 85

Unit I

1. Principles, Importance and procedure of Seed testing.
2. Equipments for Seed testing laboratory –
 - i. Seed divider
 - ii. Seed Germinator
 - iii. Seed blower
 - iv. Hot Air Oven
3. Procedure for samples handling in the laboratory.
4. Determination of heterogeneity.
5. Determination of genuineness.
6. Types of Seed sample.

Unit II

1. Seed purity test- components , equipments, methods.
2. Seed germination test- requirements, steps.
3. Seed viability test- requirement , methods.
4. Seed Vigour test- methods
5. Seed health test- objectives, steps.
6. Seed Moisture test- equipments, methods.

Unit III

1. Objectives and concept of seed certification.
2. Function of seed certification agency.
3. Standard for seed certification.
4. Essential quality of certified seed.

Unit IV

1. Objectives and principles of field crop inspection.
2. Method of field crop inspection.
3. Techniques for seed crop inspection for wheat, soybean, pea, gram and cotton.
2. Seed inspector qualities, power and duties.

Unit V

1. Seed legislation in India.
2. Seed Act.
3. Seed Control order
4. Essential commodity act.
5. Requirement for sale of seeds.

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ACCORDING TO NEW PATTERN OF DEPT. OF HIGHER EDU. OF MP.

B.Sc. V Semester, Seed Technology

Paper – Seed Pathology and Entomology

Maximum Marks :85

Unit-I

1. History –objective and importance of seed pathology.
2. Disease ^dDevelopment, Stages.
3. Seed borne diseases –
 - i) Mechanism of infection
 - ii) Factors affecting seed infection
 - iii) Important epidemic ^{and} seed borne diseases
4. Seed borne pathogens – Alternaria, Ustilago, Colletotrichum.
5. Control measure of seed borne pathogen.

Unit-II

1. Seed Health Test.
2. Dry seed Examination.
3. Storage fungi and their harmful effect on seeds.
4. Factor affecting storage fungi.
5. Isolation and identification of storage fungi.
6. Control measures for storage fungi.

Unit-III

1. Mycotoxins –
 - i) Types ^{and} of effects
 - ii) Mycotoxins producing fungi.

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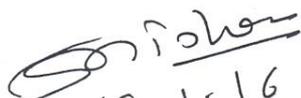
- iii) Factors affecting mycotoxins productions.
- iv) Detection of Mycotoxins.
- v) Control measures for Mycotoxins.

Unit-IV

1. Role of insects in agriculture.
2. Harmful insects crops plants –
 - i) Termite ii) Grasshopper iii) Rice weevil
 - iv) Khapra beetale v) Lemon butterfly vi) Mustard aphid.
3. Beneficial insects of crop plants:-
 - (1) Honey bee (2) Silk moth (3) Lac insect
4. Outline of insect control.

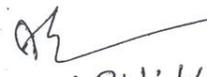
Unit-V

1. Insecticides.
2. Fumigants and method of fumigation.
3. Insecticidal poisoning and their treatment.
4. Insecticidal machinery – Sprayers, Dusters, Fumigators.
5. Integrated Pest Management.


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ACCORDING TO NEW PATTERN OF DEPT. OF HIGHER EDU. OF MP.

B.Sc. VI Semester, Seed Technology

Paper – Seed Processing, storage and marketing

Maximum Marks : 85

Unit I

1. Concept, principles and importance of seed processing.
2. Methods of seed conditioning.
3. Equipments used for seed conditioning- scalper, huller, debearder, corn sheller.
4. Layout of a seed processing plants.

Unit II

1. Seed Drying- principles, advantages and methods.
2. Seed dryers.
3. Seed cleaning – methods, separation and grading.
4. Seed conveyors and elevators.
5. Seed Blending.

Unit III

1. Definition, advantage and kinds of seed treatment
2. Methods of Seed treatment, mechanical, physical and chemical.
3. Seed treating chemicals
4. Seed treating equipments.

Unit IV

1. Methods and advantages of seed bagging.
2. Principles and methods of seed storage.
3. Factors affecting seed storage.
4. Changes during seed storage
5. Basic requirement for good seed storage.
6. Pest problems and their treatment during seed storage.

Unit V

1. Objective and importance of seed marketing
2. Major components of seed marketing-
 - (i) Forecasting of seed demand,
 - (ii) Supply of seed
 - (iii) Seed marketing structure,
 - (iv) Seed sales promotion,
 - (v) Determination of cost of seed production and seed pricing.

S. S. Jolani
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Dr. S. S. Jolani

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Devi Ahilya Vishwavidyalaya Indore (M.P.)

COLLEGE, INDORE (M.P)

Scheme of Practical Examination: ~~2014-2015~~ 2016-17

B.Sc. I Semester, Seed Technology

Max Marks 50

Time: 4 Hrs.

1. Identification and study of seed of crops plants from the mixture on the basis of morphological and anatomical characters (12 Marks)
2. Study of Chemical composition of seed . (Carbohydrates , lipids and Proteins) (12 Marks)
3. Comment and identification of 7spot. (14 Marks)
4. Viva- Voce/ Projects (6 Marks)
5. Sessional Record (6 Marks)

Total – 50 Marks

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Dr. J. S.

J. S.
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A. S.
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Devi Ahilya Vishwavidyalaya Indore (M.P.)

COLLEGE, INDORE (M.P)

Scheme of Practical Examination: ~~2014-2015~~ 2016-17

B.Sc. II Semester, Seed Technology

Max Marks 50

Time: 4 Hrs.

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1. Taxonomic Study of the flower of the following families -
i) Brassicaceae ii) Malvaceae iii) Fabaceae
iv) Asteraceae v) Solanaceae vi) Poaceae
vi) Apocynaceae vii) Ascalipidiaceae (12 Marks)
 2. Study of Common weeds (10 Marks)
 3. Comment and identification of 7 Spot (14 Marks)
 4. Viva-Voce /Project (7 Marks)
 5. Sessional record (7 Marks)
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Total - 50 Marks

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COLLEGE, INDORE (M.P)

Scheme of Practical Examination: ~~2014-2015~~ 2016-17

B.Sc. III Semester, Seed Technology

Max Marks 50

Time: 4 Hrs.

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|----|---|----------|
| 1. | Study of incompatibility in given flowering plant | 12 Marks |
| 2. | Experiment based on emasculation / Hybridization | 12 Marks |
| 3. | Identification and Comments on spot 1 to 7 | 14 Marks |
| 4. | Viva Voce / Project | 6 Marks |
| 5. | Practical Record | 6 Marks |

Total – 50 Marks

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Devi Ahilya Vishwavidyalaya Indore (M.P.)

COLLEGE, INDORE (M.P)

Scheme of Practical Examination: ~~2014-2015~~ 2016-17

B.Sc. IV Semester, Seed Technology

Max Marks 50

Time: 4 Hrs.

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- | | | |
|----|--|----------|
| 1. | Experiment based on seed testing | 12 Marks |
| 2. | Experiments based on Genuineness | 12 Marks |
| 3. | Identification and comments on spot 1 to 7 | 14 Marks |
| 4. | Viva- Voce/ Projects | 06 Marks |
| 5. | Practical Record | 06 Marks |
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Total - 50 Marks

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Dr. S. S.

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Devi Ahilya Vishwavidyalaya Indore (M.P.)

COLLEGE, INDORE (M.P)

Scheme of Practical Examination: ~~2014-2015~~ 2016-17

B.Sc. V Semester, Seed Technology

Max Marks 50

Time: 4 Hrs.

1.	Experiment based on seed Pathology	10 Marks
2.	Exercise based on Entomology	10 Marks
3.	Experiment based on Seed Health Test	06 Marks
4.	Comment upon 1 to 7	14 Marks
5.	Viva- Voce/ Projects	05 Marks
5.	Practical Record	05 Marks
Total		50 Marks

Sonika
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Dr. S. K. Singh

Dr. S. K. Singh
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Dr. S. K. Singh
18.1.16

Devi Ahilya Vishwavidyalaya Indore (M.P.)

COLLEGE, INDORE (M.P)

Scheme of Practical Examination: ~~2014-2015~~ 2016-17

B.Sc. VI Semester, Seed Technology

Max Marks 50

Time: 3 Hrs.

1.	Experiment based on seed Processing	12 Marks
2.	Experiments based on Seed Testing	12 Marks
3.	Comments upon spots 1 to 7	14 Marks
4.	Viva Voce/Project	06 Marks
5.	Practical Record	06 Marks
<hr/> <hr/> Total		50 Marks

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Q. S.

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