This question paper contains 4 printed pages]

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt any *Five* questions.

All questions carry equal marks.

Question No. **1** is compulsory

1. (*a*) Mention the causative organism of the following diseases (any *seven*) :   1×7=7

    (*i*)   Loose smut of wheat.

    (*ii*) Papaya ring spot.

    (*iii*) Citrus canker.

    (*iv*) White rust of crucifers.

    (*v*)   Angular leaf spot of cotton.

    (*vi*) Early blight of potato.

    (*vii*) Tomato yellow leaf curl.

    (*viii*) Black stem rust of wheat.

(b) Enlist the contributions of the following scientists (any *four*) :   2×4=8

    (*i*) Millardet

    (*ii*) E. Smith

    (*iii*) Ivanowski

    (*iv*) B.B. Mundkur

    (*v*) Stakman

2. Distinguish between the following (any *five*) :   3×5=15

    (*i*) Monogenic resistance and Polygenic resistance.

    (*ii*) Powdery Mildew and Downy Mildew

    (*iii*) Protectants and Eradicants.

    (*iv*) Disease escape and Disease tolerance.

    (*v*) Biotrophs and Necrotrophs.

    (*vi*) Primary inoculum and Secondary inoculum.

3. Comment on the following (any *five*) :   3×5=15

    (*i*) Disease triangle

    (*ii*) Host specific toxin.

    (*iii*) Role of pectinases in disease development.

(iv) Quarantine as a regulatory control measure.

(v) Hypersensitive response.

(vi) Effect of pathogens on photosynthesis.

4. (a) Discuss the disease cycle of late blight of potato. Give its control measures.   5

   (b) Define the following (any *five*) :   2×5=10

       (i) Monocyclic pathogen

       (ii) Pathogenicity

       (iii) Soil invaders

       (iv) Damping-off

       (v) Crop rotation

       (vi) Necrosis.

5. (a) What are steps involved in disease forecasting ?   3

   (b) Write short notes on (any *three*) :   4×3=12

       (i) Resistance of pathogen to chemicals.

       (ii) Induced structural defence mechanisms.

       (iii) Molecular Koch's postulates.

       (iv) Resistance through transgenic plants.

6. (a) Enlist the symptoms and write the control measures of the following diseases (any *three*) :

4×3=12

    (*i*)   Crown gall

    (*ii*)   Wilt of tomato

    (*iii*)   Coconut cadang-cadang

    (*iv*)   Citrus stubborn

   (b) Discuss the role of any *one* growth hormone in the disease development.

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