

Model Answers

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AS - 2995

B.Sc. (Hon's) Fifth Semester Examination, 2013

Rural Technology

Paper : RT-305

Answer ①

- (i) (a) Mango
- (ii) (b) Masig Bahar
- (iii) (a) Karnataka
- (iv) (d) Both (a) & (c)
- (v) (c) Beal
- (vi) (a) Ber
- (vii) (d) Rose
- (viii) (b) Disbudding
- (ix) (a) I
- (x) (a) solanaceae

Answer (2)

Propagation method by Layering.

There are different types of layering methods ~~etc~~ i.e.

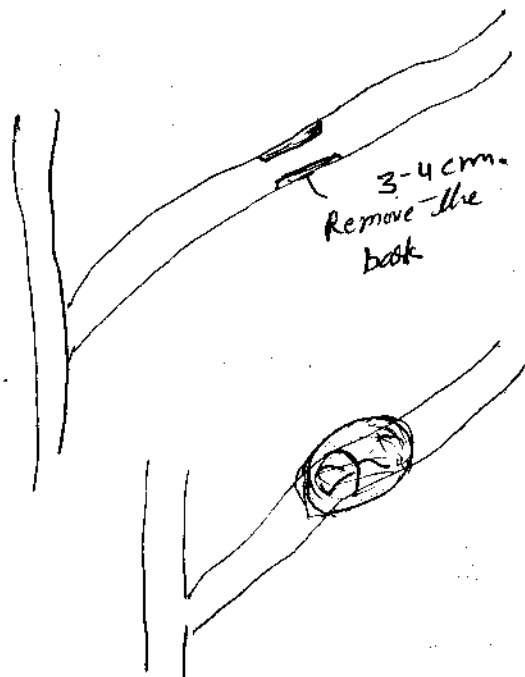
- Air layering
- Ground layering
- Serpentine layering
- Mound layering
- Tip layering.

Air layering

choose a pencil thick healthy shoot preferably with an actively growing tip.

Select a place 54-60 cm below the tip cut the bark in the ~~of~~ form of a ring by the ~~pruning~~ sharp edge of the knife 5-6 cm below a ~~and~~ node.

Make a similar cut 3-4 cm. below the first one join these two cuts by another vertical cut and remove the pieces of bark cleanly from cuts by another vertical cut the branch pieces of bark cleanly from the branch take care not to damage the wood under the bark while doing this practices.



Answer (3)

**Nursery:** An area where the planting materials are raised for sowing or planting in gardens or fields.

In other words, the nursery industry involves the production and distribution of different kind of planting materials.

Functions of Nursery

The main function of nursery is propagation of plants.

We can classify the function of nursery in two parts

(1) General function of Nursery

(a) Propagation

(b) Seed production - Flower, shrubs, vegetables, fruits etc.

(c) Nursing or processing

survival till selling the plants.

(2) Special function of Nursery

- Collection of New seeds variety and testing

- Training & Demonstration... - method of planting, fertilizer application, irrigation, plant production etc.

Answer 4

(a) Improved Variety of Mango:

In India about 1500 varieties of mango are grown including 1000 commercial varieties.

Early variety: Bamba, Bombay Green, Him sagar, Keshar, suvarnarekha etc.

Mid Season variety: Alphonso, Marquard, Banglora, Banganapalli, Dashari, Langra, Krishna Bhog, etc

Late season variety: Fazli, Mulgoa, Neelum, chousa etc.

Hybrid variety: Amrapalli (Dashari X Neelum)  
Mallika (Neelum X Dashari)  
Arka Aruna (Banganapalli X Alphonso)  
Ratna (Neelum X Alphonso)

(b) Intercropping

Intercropping can be taken up till the mango tree attain suitable height and develop canopy (at 5-6 year of age)

leguminous crops: green gram, black gram etc.

Cereal crops: wheats

Oilseed crops: Mustard, sesame, groundnut etc.

Vegetable crops: Cabbage, tomato, potato, brinjal etc.

Fruit Crops: Pineapple, ginger, turmeric etc.

It is advisable to take vegetable crop as intercrops for better returns.

(5)

Answer (5)

(a) Suitable soil and Climate for Gladiolus cultivation

- well drained sandy loam soil rich in organic matter with pH of 6 - 7.
- Subtropical and temperate climate conditions are suitable.
- The crop performs well under a temperature range 27 - 30°C.

(b) Intercultural operations

For the taking more production the inter-cultural operations is more important. There are several intercultural operations have to be done for increase the production of Gladiolus flowers.

Example :

- (1) Earthing up / Hilling
- (2) Ridging
- (3) ~~Hilling~~ Weeding
- (4) Staking etc.

Answer (6)

(a) Improved Variety of Tomato :

Arka Saurabh, Arka Vikas, Arka Ahuti, Arka Alok, Hisar, Arun, Hisar Anmol, Narendra Tomato 1, 2, Pusa Ruby, Pusa Gaurav, Pant Bahar, Arka Abhijit, Rupali etc.

Cont...

(b) Manure & Fertilizers Application

- Apply well rotten barn yard manure/compost @ 20-25 t/ha at the time of land preparation and mix well with the soil.
- A fertilizer dose of 75:40:25 kg N:P<sub>2</sub>O<sub>5</sub>:K<sub>2</sub>O/ha. may be given.
- Half the dose of nitrogen, full phosphorus and Half of potash may be applied as basal before transplanting.
- One fourth of nitrogen and half of potash may be applied 20-30 days after transplanting.
- The remaining quantity may be applied two months after planting.

Answer (7)

Disease management in Orchard

Plant disease as abnormal change in the physiological processes which disturb the normal activity of plant organs. A/c to Julius Kuhn (1958).

Disease management is very important in orchard management. There are several ~~for~~ diseases occurred in orchard and their control measure practices is also different according to pathogen, or diseases. Some major disease are : Bacterial wilt, Damping off, Early Blight, wilt fungus, Mosaic, Powdery mildew, leaf spot, Rust, die back, anthracnose, etc.

fruit drop, black tip etc.

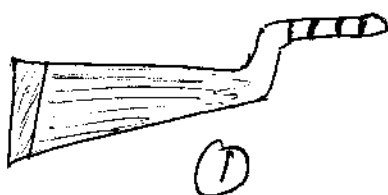
management. : Soil solarization or partial sterilization of the soil by burning trash on the surface. Seed treatment with trichoderma 5-10 gm or Carbandazim 2 g or Thirum 3 g/kg seed.

- Field sanitation.
- Crop rotation
- Providing better drainage, forming raised beds.
- Uproot the ~~has~~ heavily infected or virus infected plants etc.

we have to ~~do~~ control ~~diseases~~ adopt disease management practices according to disease incidence.

Answer 8

There are different types of instrument used in orchard i.e. Ranging rod, cross staff, Tape, Pong, pick axe, spade, kudali, Khapi, Garden fork, hand fork, dutch hoe, mixed hoe, Rake, Garden trowel, transplanting trowel, dibbler, budding knife, Grafting knife, pruning knife, grass shear, garden hult, sickle, garden shovel, pan, water can, sprinkler etc.



cont...

⑨

① Khurpi: It is most important equipment and it is used for weeding hoeing. It is different shape and size.

② Hand fork: It is totally made up of iron & it also in clows shape & it is used for breaking the crust of the soil.

Answer ⑨

The tree plant can grow in wide range of soil from medium texture clays to gravelly sands. However, poor soil will produce poor results and the best crops are found on fertile sandy & soils and loam. Soil should be well drained. Wet soil leads poor aeration and increased incidence of crown rot, die back, damping off etc. Soil with high organic matter contents are normally better structured and allow good rooting. Soil should be deep (4-9 feet) for good tree growth etc....

The climate should suitable to grow the chosen fruit crops. and site is free from the limiting factors such as cyclones, frost, hailstorms and strong hot winds.

Transpiration facility is also very important for orchard development. If you have good transpiration facility then, you can ~~can~~ get optimum benefit from your produces. etc....



Answer (10)

Production Practices & (Techniques) of Rose

B.N. Rosa spp. , family : Rosaceae

Rose is the most ancient and popular flower grown the world over. In India it is cultivated commercially for cut flowers, both for traditional flower market and contemporary florist shops.

Varieties: Hybrid Teas, Floribunda, Polyantha, Climbers & Ramblers, Miniatures & shrub roses. Landora, First Prize, superstar, Banjaran, Queen Elizabeth etc.

Soil: well drained sandy loam with PH of 6-7.

Climate: Bright ~~sun~~ sunshine for minimum of 6 hours is essential for the cultivation of Rose.

Propagation: budding, stem cuttings etc.

Planting Time: Mid Sept - Nov. Mid

Northern plains - Mid Oct.

Eastern plains - Sept. - Dec. & Feb.

Northern Hills - Oct. - Nov. & March - April.

Planting Distance:

|            |   |              |
|------------|---|--------------|
| Hy. Tea    | - | 120 x 120 cm |
| Floribunda | - | 60 x 90 cm   |
| miniatures | - | 30 x 60 cm   |
| climbers   | - | 90 x 120 cm  |

Irrigation: ones or twice in a week.

## Manuring & Fertilizers

FYM 10 kg, 6:12:12 gm of NPK/Plant.

Weeding: Weeding & hoeing should be done with khumpi after every alternate watering.

Mulching: mulched with straw, black polyethylene film, saw dust & well rotten farmyard etc.

Disucking: should be removed as soon as they appear.

Disbudding: The young vegetative bud in the leaf axils or basal and lateral shoots and disbudded to encourage branching.

Pinching: Remove faded flowers regularly.

Pruning: Remove unwanted branches at regular interval.

Disease: Black rot, Powdery mildew, dieback etc.

Insects: bud worm, Rose chaffer beetle etc.

Harvesting: Early morning & late afternoon

yield: about 10 lakh flowers/ha/hear

Answer (11)

Production practices or techniques of TomatoB.N. Lycopersicon esculentum

Family: Solanaceae, Origin - Mexico.

Tomato is one of the most popular and widely grown vegetables in the world ranking second in importance to potato in many countries. The fruits are eaten raw or cooked.

Variety: Arka saurabh, Arka vikas, Arka Alok, Narendra Tomato, Arka Abhijit, Hybrid Tomato etc.

Soil: A well-drained, fairly light fertile loam with a good moisture holding capacity is ideal for growing a good crop of tomato. PH 6-7.

Climate: The tomato is a warm-season crop.  
Avg. monthly Temp.  $21^{\circ}\text{C} - 23^{\circ}\text{C}$

Land preparation:

Ploughing 2-3 times and apply 20-25 t/h FYM at the time of land preparation.

Seed rate: 300-400 g/ha. of Hybrid seeds 70-90 g/ha.

Time of Planting:

|                   |                 |
|-------------------|-----------------|
| Kharif - July     | } transplanted. |
| Rabi - Oct - Nov. |                 |
| Zaid - Feb.       |                 |

Seed treatment: Tricoderma @ 5-10 g/kg or Carbandazim 2 gm/kg seeds.

Spacing - winter crop 75 x 60 cm.  
                  spring 75 x 45 cm

Manure & Fertilizers:

FYM 20-25 t/ha.

75:40:25 kg N:P<sub>2</sub>O<sub>5</sub>:K<sub>2</sub>O/ha. may be given.

Irrigation: During summer 5-7 days interval  
                  winter season 10-15 days interval

Weed control: All weeds should remove timely.

Staking: In the case of indeterminate variety it is very important.

Insect: Ground borer, Leaf miner, Catterpillar etc.

Disease: Bacterial wilt, Damping off, mosaic etc.

Harvesting: The following ~~step~~ stages of maturity for harvesting

- ① Green stage
- ② Pink stage
- ③ Ripe stage
- ④ Full ripe stage.

Yield : normal crop of Tomato yields about 250 q/ha.  
An excellent crop may produce as high as 400 q/ha