

Horticulture Sample Question Paper 2023

Max. Time: 3 Hours

Max. Marks: 60

Section A: Objective Type Questions

1. Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)

i. personality trait is related to being calm, self-confident, and cool.

Ans: Emotional stability

ii. Write any 2 sources of motivation and inspiration.

Ans: Music, book, activities, expansive thoughts, living in the present (any 2)

iii. Write keyboard shortcuts for the cut and paste commands.

Ans: CTRL+ C and CTRL + V

iv. Write any 2 behavioral and entrepreneurial competencies required for being an entrepreneur.

Ans: Adaptability, Decisiveness, Initiative, Self-Confidence, Organizational Skills, Critical thinking.

v. Explain why spreadsheet applications have become popular

Ans: Spreadsheets can be programmed and can also be used for general computations.

vi. Expand S.M.A.R.T

Ans: Specific, Measurable, Achievable, Realistic, and Timely.

2. Answer any 5 out of the given 7 questions (1 x 5 = 5 marks)

i. Flower crop, which is being exported from India in February

A. Rose

B. Carnation

C. Lilium

D. Chrysanthemum

ii. Common method of propagation of lawn grass

A. Seeds

B. Dibbling

C. Turfing

D. Turf plastering

iii. Plants not suitable for topiary making

- A. *Clerodendron inerme*
- B. *Duranta plumieri*
- C. *Murraya exotica*
- D. *Nelumbo nucifera***

iv. Taj Mahal is one of the popular varieties for the protected cultivation of which crop

- A. Gladiolus
- B. China aster
- C. Rose**
- D. Chrysanthemum

v. Full form of CAD is

- A. Computer-Added Design
- B. Computer Added Diploma
- C. Computer-Aided Design**
- D. Computer-Aided Draft

vi. Which of the following marigold varieties belongs to the French Group

- A. Pusa Narangi Gaiinda
- B. Pusa Basanti Gaiinda
- C. Pusa Arpita**
- D. Pusa Bahar

vii. Which indoor plant is propagated through nodal/cane stem cuttings

- A. *Dieffenbachia***
- B. *Peperomia*
- C. *Sansevieria*
- D. *Kalanchoe*

3. Answer any 6 out of the given 7 questions (1 x 6 = 6 marks)

i. Which of the following essential oil-rich flower crops are being commercially utilized in the perfumery industry

- A. Rose**
- B. Mint
- C. Sunflower
- D. Coriander

ii. Desiccant commercially used for drying flowers

A. Silica gel

B. Boron

C. Sulfur

D. Dust

iii. Public area of outdoor rooms includes the features

A. Front yard

B. Orchard

C. Garage

D. Swimming Pool

iv. Flower arrangement formed by a combination of flowers, fruits, and vegetables

A. Zeneika

B. Nageire

C. Jiyubana

D. Morimono

v. Geotropic bending is a common post-harvest disorder of crops

A. Carnation

B. Liliun

C. Gladiolus

D. Rose

vi. Name the country where the largest flower auction centre is located

A. The Netherlands

B. Australia

C. Japan

D. Srilanka

vii. Jasmine belongs to the family

A. Rosaceae

B. Oleaceae

C. Compositae

D. Iridaceae

4. Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)

i. Ideal temperature range required by indoor plants during the daytime

A. 15-21°C

B. 30-35°C

C. 8-10°C

D. 40-45°C

ii. Which of the following is a fragrant flowering shrub suitable for outdoor landscaping

- A. *Ficus benjamina*
- B. *Duranta plumieri*
- C. *Hamelia patens*
- D. *Cestrum nocturnum***

iii. Scientific name of tuberose

- A. *Scindapsus aureus***
- B. *Aglaonema commutatum*
- C. *Coleus blumei*
- D. *Polianthes tuberosa*

iv. Which of the following is a loose flower crop

- A. Heliconia
- B. Lilium
- C. Carnation
- D. Marigold**

v. The most common weed of lawn grass is

- A. *Cyperus rotundus***
- B. *Chenopodium album*
- C. *Amaranthus* spp.
- D. *Rumex acetosella*

vi. The process of removing field heat from flowers is known as

- A. Pulsing
- B. Pre-cooling**
- C. Holding
- D. Grading

5. Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)

i. Picotees is a popular flower type in crops

- A. Chrysanthemum
- B. Carnation**
- C. Rose
- D. Gladiolus

ii. Plant suitable for making the edge

- A. *Bougainvillea* spp.
- B. *Duranta plumieri*
- C. *Alternanthera* spp.**
- D. *Hamelia patens*

iii. Hikae is placed in a flower vase at an angle of

- A. 15
- B. 45
- C. 35
- D. 75**

iv. Swarna Rekha and Rajat Rekha are popular varieties of

- A. Rose
- B. Tuberose**
- C. Gladiolus
- D. Chrysanthemum

v. Which one of the following is not a traditional Ikebana arrangement

- A. Heaven (Shin)
- B. Man (Soe)
- C. Earth (Hikae)
- D. Freestyle**

vi. The herbaceous border is a characteristic feature of which type of garden

- A. Italian garden
- B. English garden**
- C. French garden
- D. Japanese garden.

6. Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)

i. Most of the cultivars of chrysanthemum are

- A. Long day
- B. Short day
- C. Day neutral
- D. Medium long day

ii. In one mowing, how much portion of the lawn grass should be cut

- A. 1/2
- B. 2/3**
- C. 1/4

D. 1/3

iii. Hormone responsible for senescence in flowers

- A. Auxins
- B. Cytokinins
- C. Gibberelins

D. Ethylene

iv. Water drying is suitable for drying

- A. Lavender
- B. Corn
- C. Baby's Breath

D. Stem

v. A person involved in the business of cut flowers, cut foliage, and floral arrangements is

- A. Florist**
- B. Floriculturist
- C. Entomologist
- D. Pathologist

vi. Which of the following software is used for Computer-Aided Design

- A. Turnitin
- B. Auto CAD**
- C. Archi CAD
- D. Microsoft

Section B: Subjective Type Questions

Answer any 3 out of the given 5 questions on Employability Skills (2 x 3 = 6 marks). Answer each question in 20 – 30 words.

7. What do you mean by personality?

Ans: Personality is a related, enduring set of traits. These traits are made up of emotional, behavioural, and mental sets of characteristics. Heredity has been found to be determining personality apart from emotional forces. Personality is shaped through family, culture, society, education, and environmental factors.

8. Explain the role of a book in self-motivation.

Ans: Books are said to be best friends. They expand our horizon of thinking. They help us visualize the unknown and uncharted territories beyond our capacities.

9. What do you understand by the term presentation?

Ans: A presentation is a systematic display of information. It consists of a number of slides containing text, graphics, movies, sound, and graphs. Slides of a presentation are displayed one by one on the screen.

10. Explain interpersonal skills for an entrepreneur.

Ans: Interpersonal skills are critical for any business owner or entrepreneur to possess because the job involves communicating, interacting, and selling to customers.

11. Name any two software packages for presentations.

Ans: Reuse, Reduce, Recycle, use less heat and reconditioning, replace your light bulbs, drive less, drive smart, Buy energy efficient products, Use less hot water, Use the off buttons, Plant a tree.

Answer any 3 out of the given 5 questions in 20 – 30 words each (2 x 3 = 6 marks)

12. What do you understand by the term bonsai?

Ans: Bonsai is an art that expresses in miniature the beauty of natural tree forms. The word 'Bonsai' is comprised of two words: 'Bon' means a tray or shallow container, and 'sai' means to grow; thus, bonsai means something growing in a shallow container or tree in a pot.

13. What is terrarium culture?

Ans: It is a sophisticated technique of growing ornamental plants inside transparent glass containers in a manner to make it a complete ecosystem.

14. What is the role of mowing in lawn grasses?

Ans: Role of mowing in lawn grasses

- It stimulates bud development.
- Shoots become thicker and roots shorter.
- Helps in maintaining its attractiveness for maximum utility.

15. Define floral preservatives.

Ans: Floral preservatives refers to any substance which is capable of inhibiting, retarding or arresting the growth of microorganism thus helps in improving post harvest life and quality of flowers. They mainly consisted of sugars, germicides, ethylene inhibitors, growth regulators, and some mineral salts.

16. What are potpourris?

Ans: Potpourri: It is a special dried floral arrangement, a mixture of sweet-smelling leaves, spices, seeds, roots, and distilled essential oils which is filled in pillows or sachets. The important plants used for making potpourris are rose, lilac, lavender, pinks, hyacinths, lilies, violets, etc., and others associated with perfume, namely geranium, daisy bush, bergamot, sage,

savoury, thyme, etc. In addition, ferns, pinecones, lily pods, and driftwood, and other items collected from forests and gardens can also be added.

Answer any 2 out of the given 3 questions in 30– 50 words each (3 x 2 = 6 marks)

17. Importance of CAD in landscaping (Any six points)

Ans: Importance of CAD in landscaping

CAD is a software system that is capable of transforming raw data into plans, drawings, and models to enable effective planning and management.

Importance

- Areas and distances can be determined for planning and maintenance.
- Exact locations of all items can be recorded for future reference.
- Contour plans can be illustrated for drainage works.
- Earthworks of cut and fill can be made.
- Costs for soil volumes can be calculated for a range of variables (from different suppliers and different grades of raw products).
- 3D models are created to illustrate the concept and to show the interaction of light, shade, plant growth, and future development.
- CAD plans can be entered into software that automatically operates earthmoving machines that can level the site as specified on the plans
- Information can be transferred by email.

18. Floriculture as an employment generation sector.

Ans: Floriculture as an employment generation sector

- Traditional flower cultivation
- Cut flower cultivation
- Nursery industry
- Plant rental services
- Hybrid seed production business
- Turf industry
- Florist and floral decorations
- Value-added products-based industries

19. Type of pinching in carnation.

Ans: Type of pinching in carnation

Depending upon the need of crop spread, single, one-and-a-half, and double pinch methods are adopted. The ideal time for pinching is early morning. When the plant attains 5 nodes, the first pinch is given. This is called 'single pinch'. This would give rise to six lateral shoots. With a 'one and a half pinch', 2-3 of these lateral shoots are pinched again. For the 'double pinch', all the lateral shoots are pinched off.

Answer any 3 out of the given 5 questions in 50– 80 words each (4 x 3 = 12 marks)

20. Write the protected cultivation of chrysanthemum with respect to soil and climate, major insect pests, and diseases.

Ans: Climate: Cut chrysanthemums are grown under polyhouses with the following environmental conditions.

- Temperature: 16 - 25°C
- Relative humidity: 70 - 85 %
- CO₂: 600 - 900 ppm
- Photoperiod: Long day conditions with 13 hours light & 11 hours darkness during the vegetative stage (up to 4-5 weeks from planting) and short day conditions with 10 hours light & 14 hours darkness during the flower bud initiation stage.
- Soil: Well-drained sandy loam soil with good texture and aeration, or growing medium made of 1:1:2 of soil, compost, and cocopeat with a pH of 5.5 to 6.5.
- Insect pests: Leaf miner, Thrips, Aphids, Red spider mite
- Diseases: Leaf spot, White Rust, Wilt, Powdery mildew

21. Write in detail about the different methods of storage of cut flowers.

Ans: There are 3-4 general methods of storage of flowers

- **1. Refrigerated storage:** Most widely used method of storage of cut flowers. There are two types: (a) Wet storage and (b) dry storage.
 - (a) Wet storage: Flowers stored with their bases dipped in water or preservative solution. Good for short duration, day-to-day handling. Stored at a temperature of 2-4°C.
 - (b) Dry storage: Flowers are sealed in plastic bags to prevent loss of moisture. More laborious, but hold the flowers for a longer duration. Storage at 0-1°C is ideal for temperate flowers (Roses, carnations, chrysanthemums), but for tropical flowers like anthurium, cattleya, heliconia, etc., storage is done at 7-15 °C. For sub-tropical flowers like gladiolus, jasmine, proteas, etc., storage is done at 4-7°C.
- **2. Controlled atmosphere storage (CA):** Low temperature storage in gas-tight chambers under decreased levels of oxygen (O₂) and increased levels of carbon dioxide (CO₂). CO₂ levels higher than 4% and O₂ levels lower than 0.4 per cent cause injury and anaerobic conditions, respectively.
- **3. Modified Atmosphere storage (MA):** A less precise form of CA storage, the dry storage of flowers in sealed bags leads to a reduction in O₂ and an increase in CO₂ levels due to respiration of the tissue. A buildup of a very high level of CO₂ may cause damage to flowers.
- **4. Hypobaric or low-pressure storage (LPS):** Storage at low atmospheric pressure under refrigerated conditions, continuous ventilation, and high relative humidity. Rapid loss of water from tissues is a major disadvantage, and the cost of installation is also high.

22. Explain in detail the different features of gardens with respect to hedges, edges, carpet bedding, and garden adornments.

Ans:

- **Hedge:** Shrubs or trees planted at regular intervals to form a continuous screen are called a hedge.
- **Edges:** Evergreen, low-growing plants having the same characteristics as for planting a hedge are grown to form an edge.
- **Carpet bedding:** It refers to covering an area, preferably a bed or a series of beds, with dense, low-growing herbaceous plants according to a set design.
- **Garden adornments:** Statues, garden seats, ornamental vases, sun dials, bird baths, floral clock, fountains, etc.

23. Explain any four various maintenance operations required for lawn making.

Ans:

- **Irrigation:** Lawn grasses are shallow-rooted; therefore, they require frequent light irrigation. Use of sprinkler irrigation can save water and the number of man-days (labour) to a considerable extent. In summer, watering is done at a two-day interval, while in winter, irrigation frequency is reduced to once a week.
- **Mowing:** Lawn grass should be allowed to grow 5-6 cm during any season. In a single mowing, only 33-40% of the clippings should be removed.
- **Fertilization:** Broadcasting a fertilizer (NPK) mixture at the rate of 50-60 g/m² during February-March and August-September is necessary for a lush green lawn. Spraying of Urea at 0.3% is also beneficial
- **Dethatching:** The process of removing a layer of dead and decaying organic debris and the living roots, crown, and stems of the lawn grass (thatch) from the top layer is known as dethatching.
- **Liming:** The Growth of moss over the lawn area is an indication of acidic soil, which means the soil requires liming. Under such conditions, powdered chalk or lime should be applied at the rate of 250 g per m² area.

24. Write the commercial cultivation of gladiolus with respect to soil and climate, major insect pests, and diseases.

Ans:

- **Climate:** Subtropical and temperate climatic conditions are suitable. The crop performs well under a temperature range of 27 - 30°C.
- **Soil:** Well-drained sandy loam soil rich in organic matter with a pH of 6 to 7.
- **Insect-Pest:** Thrips, Semi looper and Helicoverpa
- **Diseases:** Leaf spot, Fusarium wilt, blight