

COVER PAGE

Floriculture (765) Marking Scheme Class XII - 2018-19

Time: 3Hours

Total Marks: 60

General Instructions:

1. *Marking Scheme is divided into two sections: Section-A and Section- B.*
2. **Section–A:**
 - i. *Multiple choice question/Fill in the blanks/Direct Questions of 1 mark each. Answer any 10 questions out of the given 12 questions.*
 - ii. *Very Short Answer of 2 marks each. Answer any 5 questions from the given 7 questions.*
 - iii. *Short Answer of 3 marks each. Answer any 5 questions from the given 7 questions.*
3. **Section–B:***Long/Essay type questions of 5 marks each. Answer any 5 questions from the given 7 questions.*
4. *All questions of a particular section must be attempted in the correct order.*
5. *Please check that this question paper contains 33 questions out of which 25 questions are to be attempted.*
6. *The maximum time allowed is 3 hrs.*
7. *The marking scheme carries only suggested value points for the answers. These are only guidelines and do not constitute the complete answers. The students can have their own expression and if the expression is correct, the marks be awarded accordingly.*

Floriculture (765)
Marking Scheme
Class -XII, 2018-19

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Section A

Multiple choice questions (Q. No. 1-12, one mark each), Attempt any 10 questions 10 x 1 = 10

Q.No.1 Which of the following is the national flower of India?

Ans.1 a) Lotus

Q.No.2 Which of the following is called as art and science of developing living sculptures of plants in various decorative geometrical shapes ?

Ans. 2 a) Topiary

Q.No.3 Which of the following is not a good plant for making hedges in hills?

Ans.3 d) Croton

Q.No.4 In which of the following dibbling method of planting is commonly used?

Ans. 4b) Lawn

Q.No.5 Most of the indoor plants grow best at which of the following day temperature range?

Ans. 5 b) 20- 25

Q.No.6 Which of the following is not an important loose flower crop grown in India?

Ans. 6 b) Lilium

Q.No.7 Which of the following is most important medium for drying flowers and foliage?

Ans. 7 c) Silica gel

Q.No.8 Calyx splitting is the major disorder in which of the following cut flower crop?

Ans. 8 d) Carnation

Q.No. 9 Which of the following is not commonly grown cut flower in green houses in India?

Ans. 9 c) Marigold

Q.No.10 Which of the following flower is commonly used in poultry feed?

Ans. 10 a) Marigold

Q.No.11 Which of the following cut flower is harvested at painting brush stage for local market?

Ans.11 c) Carnation

Q. No.12 Which of the following is a kind of flower arrangement?

Ans.12b) Ikebana

Very short answer type questions (Q. No. 13-19, 2 marks each). Attempt any five questions

5 x 2 = 10

Define the following

Q.No.13 Pinching: It refers to removal of the growing point of a shoot along with a few leaves so as to encourage branching or to produce a bushy growth.

Q.No.14. Disbudding: It refers to removal of the superfluous flower buds so as to divert the sap to a few stronger branches which is required for the quality production of branches and flowers.

Q.No.15. Greenhouse: It is a framed or an inflated structure covered with a transparent or translucent material which permits at least partial control of plant environment and which are large enough to permit a person to carry out cultural operations.

Q.No.16. Pulsing: It consists of placing the lower portion of cut flower stems in solution containing high percentage of sugar and germicide for a period of few hours to two days. Specific formulations developed vary with the flower species as sucrose 2-20% for 12-48 hours at 20 -27 ° C and relative humidity 80-100% under 2000-2500 lux cool light.

Q.No.17 CAD: Computer-Aided Design(CAD) is the technology concerned with the use of computer systems to assist in the creation, modification, analysis, and optimization of a design. It is also known as computer-aided design and drafting (CADD).

Q.No.18 Mowing: It is the cutting of lawn grass for maintaining its attractiveness for maximum utility.

Q.No.19: Pergola: It is defined as a series of arches joined together.

Short answer type questions (Q. No. 20-26, 3 marks each). Attempt any five questions

5 x 3 = 15

Write short notes on the following:

Q.No.20 Rockery/Rock garden

Rock garden is an important feature of a garden. The real rock garden is one which mimics a mountain range. These gardens should be set out on some definite idea which may be replica of a particular mountain in miniature form or the strong slope of a hill. There are three kinds of rock garden

- First is purely ornamental, which is required to be constructed with a great deal of artistry and science.
- Second, rock garden is developed on the basis of close imitation of the geographical formation of a fragment of mountains in which grown plants are more or less natural to it.
- Third, it is solely concerned with the cultivation of plants from high mountains.

Plants for rock garden: In sunny situations large number of hardy but attractive plants including cacti and succulents, some conifers, dwarf and low growing flowering shrubs, bulbous plants, hardy annuals can be grown. While for shady situations, shade plants like *Aspidistra* sp, *Maranta* sp, *Aglaonema* sp., *Caltha* sp etc can be grown.

Q.No.21 Main functions of landscaping home

- Extends the living area of the home
- Screening for privacy and protection from wind and sun
- Outlet for overflowing children energy
- Minimizing noise
- Absorb and filter summer sun
- Reduce need for artificial air conditioning
- Ground covers prevent soil erosion
- Shield house from heat robbing winds and lessen electricity heating and cooling bills.

Q.No.22 Benefits of CAD

- Accuracy to landscape designs
- Cost saving
- Increased Productivity
- Time saving
- Uniform Designs
- Editing
- Quick learning of software than hand drafting

Q.No.23 Off season cultivation practices of chrysanthemum

- Rooting cuttings in vegetative phase are planted in well prepared soil
- Fertigation is done.
- Long days conditions are given to cuttings by illumination at night
- After establishment, pinching done to induce multiple stems. If single stem is required then no pinching.
- Allow the plants to grow about 30-45 cm length or upto desired stem length under long days.
- Short day treatments are given to plants to induce flowering, preferably a minimum of 12 hours day length, for a period ranging from 6 to 15 weeks depending on the response group, until induced flower buds develop to a stage where day length does not affect flower development.
- If single bloom is required, lateral buds should be removed after 4 weeks of short day treatment.
- The flowers are harvested with proper stem length and proper development stage of flowers.

Q.No.24 Prerequisites for flower arrangements

- Nature of arrangement: Fresh or dry flower arrangement
- Type of arrangement: Japanese flower arrangement or English flower arrangement
- Floral arrangement shapes
- Principles and elements of flower arrangement
- Material required for flower arrangement: Flowers, foliage, floral foam, containers, holders

Q.No.25 Main advantages of dried ornamentals

- Availability year round
- Cheaper
- Eco friendly and biodegradable
- Easy to transport and can survive heat and cold
- Much higher shelf life compared to fresh flowers
- Number of value added products can be made

Q.No.26 Preservatives for longevity of flowers

Floral preservatives are used to improve flower opening, flower size, shape, colour and longevity of cut flowers. A floral preservative should have two basic constituents namely sugar and biocide. Besides, it may have other ingredients such as inorganic salts, growth regulators, organic acids, anti ethylene compounds.

- Sugars (Sucrose)
- Mineral salts (CaCO_3 or CaCl_2), CuSO_4 , ZnSO_4 etc.
- Germicides (8HQC and 8HQS)
- Organic acids (Citric acid, benzoic acid, tartaric acid, isoascorbic acid, glycolic acid)
- Ethylene inhibitors (AOA, MVG, AVG)
- Growth regulators (BAP)

Section –B

Long answer type questions (Q. No. 27-33, 5 marks each). Attempt any five questions
5 x 5 = 25

Q.No.27 Discuss production technology of rose under the following heads : Soil and Climate, Important Varieties, major pests and diseases.

Soil: Well drained medium, loamy soil having adequate organic matter, pH 6.0-6.5

Climate:

- Temperature (Day 18-28 °C and night 15-18 °C)
- Relative humidity (50-60%)
- Light (photoperiod over 12 hours and intensity 6000- 8000 foot candles)
- Carbon dioxide (1000-3000 ppm)

Important varieties: First Red, Grand Gala, Konfetti, Noblesse, Tajmahal, Sangaria, Gladiator

Major pests: Red Scale, Aphids, Thrips, Jassids, Chafer beetles, Red Spider mite, Digger wasp

Major diseases: Die Back, Black Spot, Powdery mildew, Rust, Grey mould, Wilt, Mosaic, Leaf blight

Q.No.28 What is lawn? What are the major advantages of lawn? Explain different methods of planting lawn grasses.

- Lawn is a ground cover of perennial grass which persists in close mowing and requires proper management practices.

Advantages

- Soil erosion control and dust stabilization
- Run off reduction and flood control
- Enhancement of ground water recharge
- Enhancement of heat dissipation and temperature moderation
- Reduction in glare, noise and visual pollution problems
- Recreational benefits
- Aesthetic benefits
- Carbon sequestration

Different methods of planting Lawn grass

- Seeding
- Dibbling
- Plastering
- Sprinkling
- Turfing

Q. No. 29 What is value addition? Write some value added products of rose and discuss briefly drying of flowers

- Value addition is any step taken to increase the value of a raw product anytime between harvesting and sale of the final product.
- **Value added product of rose:** Gulkand, Pankhuri, Rose oil, Rose jam, Rose water, Pot pourries etc.

Different methods of drying flowers

- Air drying
- Embedded drying
- Press drying
- Water drying
- Glycerine drying

Q.No. 30 What is protected cultivation? Write in detail the protected cultivation of carnation

Protected Cultivation: Protected cultivation is the technique of providing favourable environmental or growth conditions to the plants. It is rather used to protect plants from the

adverse climatic conditions by providing optimum conditions of light, temperature, humidity, CO₂ and air circulation for the best growth of plants to achieve maximum yield and best quality.

Protected cultivation of Carnation

Soil: Light texture loam or sandy loam soil with pH 6-7

Climate: Temperature : Night (winter 10-11⁰C, spring: 12.7 ⁰C and summer: 13-15.4 ⁰C) and day (18-23 ⁰C)

Relative humidity: 50-60%

Light: Long days over 16 hours

Carbon dioxide: 500-1500 ppm

Varieties:Standard: Scania, Master, Raggio de Sole, Red William, Solar, Arthur Sim,

Spray: Rony, Peach Delight, Silvery Pink, Iceland, Twinkle

Propagation: Terminal stem cuttings (8-10 cm long with 4-6 leaf pairs)

Optimum planting density: 25-32 plants /m²

Planting distance: Standards: 20 X 20 cm and **Sprays:** 30 X 30 cm

Fertilization: Standards: FYM: 5kg, N: 30 g, P: 20 g, K: 10g/m²

Sprays: FYM: 5kg, N: 40 g, P: 20 g, K: 10g/m²

Pinching: Single pinch, Pinch and a half and double pinch

Other operations: Deshooting, disbudding, staking

Harvesting: Standard cultivars for local market are harvested when flowers are half opened or at painting brush or outer petal is perpendicular to stem, while for distant market cross is developed on buds and colour is visible.

Sprays cultivars are harvested for local market when two flowers have opened and other have shown colour, while for distant market when 50 % flowers have shown colour.

Yield: Standard: 4-6 stems/plant

Sprays: 8-12 stems/plant

Average yield: 200-300 flower stems/m²/year

Insects: Aphids, Red spider mite, Heliothis caterpillar

Diseases: Stem rot, Flower bud rot, Bacterial wilt, Rust, Flower blight, Viral diseases.

Q.No. 31 Discuss different features of gardens in brief

- Garden drives
- Paths

- Garden steps
- Garden walls
- Fences
- Gates
- Arches
- Pergolas
- Bridges
- Lawns
- Flower beds
- Borders
- Carpet Bedding
- Shrubbery
- Hedge
- Edge
- Terrace
- Dry wall
- Greenhouse
- Conservatory
- Garden adornments (statues, Garden seats, ornamental vases, sun dials, bird baths, floral clock, fountains, statues etc.)
- Specialised gardens (water garden, rock garden, paved garden, sunken garden, vertical garden, etc.)

Q.No.32 Enlist major pest and diseases of major floricultural crops and discuss their management

Rose		
	Major insects	Control
1.	Aphids (<i>Macrosiphum rosaeformis</i>)	Spray Metasystox @ 50 ml/100 L
2.	Red scales (<i>Aonidiella aurantii</i>)	Spray of 0.1% Methyl parathion or Malathion or Rogor, Metasystox
3.	Thrips (<i>Thrips maginis</i>)	Spray Metasystox (0.1%)
4.	Jassids (Leaf hoppers)	Spray Methyl parathion 1.5ml/lt
5.	Red Spider Mites (<i>Tetranychussp.</i>)	Spray Vertimec @ 25 ml/100 L
	Major Diseases	Control
1.	Powdery mildew (<i>Sphaerotheca pannosa</i>)	Spray wettable sulphur (0.2%)
2.	Black Spot (<i>Diplocarpon rosae</i>)	Spray Dithane M-45 or Captan @ 2g/L
3.	Rust (<i>Phragmidiummucronatum</i>)	Spray wettable sulphur (0.2%) or Ferbam (0.2%)
4.	Die-Back (<i>Diplodia rosarum</i>)	The pruned surface should be coated with Bavistin paste or Chaubatia paint mixed with 0.1% Dichlorovos
Chrysanthemum		
	Major insects	Control

1.	Aphids (<i>Macrosiphoniella sanborni</i>)	Spray Metasystox (0.1%)
2.	Thrips (<i>Haplothrips ramakrishnae.</i>)	Spray Malathion (0.1%)
3.	Bud borer (<i>Helicoverpa armigera</i>)	Methyl parathion 0.05% or Fenvalerate 0.01% at appearance of eggs.
4.	Leaf miners (<i>Liriomyza trifolii</i>)	Spray Nuvacron (0.1%)
	Major Diseases	Control
1.	Leaf spot (<i>Septoria chrysanthemella</i>)	Spray Bavistin (0.1%)
2.	Leaf spot (<i>Alternaria chrysanthemi</i>)	Spray Dithane M-45 (0.2%)
3.	Leaf Spot (<i>Phyllostictachrysanthemi</i>)	Spray Copper oxychloride (0.3%)
4.	Wilt (<i>Fusarium oxysporum</i> , f. sp. <i>Chrysanthemi</i>)	Drenching the soil with Thiophanate methyl or combination of Benlate + lime + nitrate are effective.
5.	Powdery mildew (<i>Oidium chrysanthemi</i>)	Spray Wettable sulphur (0.2%)
6.	Root rot (<i>Pythium</i> sp., <i>Phytophthora</i> sp.)	Sterilization of propagation media and soil drenching with Thiram
7.	Rust (<i>Pucciniachrysanthemi</i>)	Spray Wettable sulphur (0.2%)/
8.	Stem rot (<i>Rhizoctonia solani</i>)	Spray Benomyl (0.2%)
Carnation		
	Major insects	Control
1.	Aphids (<i>Myzus persicae</i>)	Spray Dimethoate (0.3%)
2.	Thrips (<i>Thrips tabaci</i>)	Spray Malathion (0.1%)
3.	Red spider mites (<i>Tetranychus urticae</i>)	Spray Dimethoate (0.06%)
	Major Diseases	Control
1.	Fusarium wilt (<i>Fusarium oxysporum</i> f. <i>dianthi</i>)	Soil sterilization and crop rotation
2.	Stem rot (<i>Rhizoctonia solani</i>)	Soil sterilization, fumigation and spray Zineb (0.3%)
3.	Branch rot (<i>Alternaria dianthi</i>)	Use of disease free plants and Spray Dithane M-45 (0.2%)
4.	Rust (<i>Uromyces dianthi</i>)	Spray Wettable sulphur (0.2%)
5.	Ring spots (<i>Mycosphaerella dainthii</i>)	Spray Thiram (0.2%) or Zineb (0.2%)
6.	Greasy spot (<i>Zygophiala jamaicensis</i>)	Spray Dithane Z-78 (0.2%)
7.	Bacterial wilt (<i>Pseudomonas caryophylli</i>)	Removal of affected plants and use of disease free cuttings
Gerbera		
	Major insects	Control
1.	White flies (<i>Trialeurodes vaporariorum</i>)	Spray Malathion (0.1%)
2.	Leaf miners (<i>Liriomyza trifolii</i>)	Spray Dimethoate (0.03%)
3.	Aphids (<i>Myzus persicae</i> and <i>Aphis fabae</i>)	Spray Metasystox (0.1%)
4.	Mites (<i>Hemitarsonemus latus</i> and	Spray Nuvacron (0.2%)

	<i>Steneotarsonemus pallidus</i>)	
5.	Thrips	Spray Nuvacron (0.2%)
	Major Diseases	Control
1	Foot and root rot (<i>Phytophthora, Pythium, Rhizoctonia solani</i>)	Seed treatment with Captan and soil drenching with benomyl (0.2%)
2.	Powdery mildew (<i>Oidium</i> sp.)	Spray wettable sulphur (0.2%)
3.	Anthracoze (<i>Colletotrichum gloeosporiodes</i>)	Spray Bavistin (0.1%)
4.	Botrytis	Spray bavistin (0.1%)
5.	Leaf spot (<i>Phyllosticta gerbericola</i>)	Spray bavistin (0.1%)
6.	Crown rot (<i>Phytophthora cryptogea</i>)	Soil drenching with benomyl or Rhidomit (0.3%)
Gladiolus		
	Major insects	Control
1.	Aphids (<i>Aphis craccivora, Aphis gossypii and Macrosiphum, gossypii</i>)	Spray Malathion (0.1%)
2.	Thrips (<i>Liothrips</i> sp., <i>Thrips hawaiiensis</i>)	Spray Malathion (0.1%)
3.	Cut worms (<i>Agrotis segetum</i>)	Spray Malathion (0.1%)
	Major Diseases	Control
1.	Wilt (<i>Fusarium oxysporum</i> f <i>gladioli</i>)	Spray Bavistin (0.2%)
2.	Core or corm rot (<i>Botrytis gladiorum</i>)	Spray Maneb (0.2%)
3.	Dry rot or neck rot (<i>Stromatinia gladioli</i>)	Hot water treatment of cormels and spraying CuSO ₄ solution
4.	Storage rot (<i>Penicillium gladioli</i>)	Treatment with benomyl (0.2%)

Q.No.33 Discuss different methods of flower arrangement

- Japanese flower arrangement (Ikebana): Emphasis is given on spiritual and religious background and only few flowers are used.
Different types of Ikebana:
 - Moribana
 - Nageire
 - Jiyubana
 - Zeneibana
- English flower arrangement: Emphasis is given on mass flower arrangement and primarily a form of art, so as to make the arrangement attractive as far as possible.