



Chhatrapati Shahu Ji Maharaj
University, Kanpur

Answer Script Details
Barcode 10687152

Roll No. 25088000033
Total Mark 36/50.00

Exam M.SC IN AGRICULTURE HORTICULTURE MSCAG_ODI
Subject HORT5002 - LAND SCAPING AND ORNAMENTAL GAR

Question wise Mark Summary

Q.No Mark Q.No Mark Q.No Mark Q.No Mark

1A 3/5

1B 3/5

1C 4/5

1D 3/5

1E 5/5

1F 4/5

2 0/10

3 0/10

4 0/10

5 7/10

6 7/10

7 0/10

8 0/10

9 0/10

Chhatrapati Shahu Ji Maharaj University Kanpur, Uttar Pradesh

PART-I

Date of Exam: 30/01/25 Shift: 1st
 Room No.: IT-4
 Paper Code: HORT5002 Subject: L.O. or Year/Sem: 1st/Sem
 Name of Candidate: MOH ASIF

Roll No.: 2508800033

Signature of Candidate: *Moh Asif*
 Signature of Investigator: *V. Anam Pathi*
 COE Facsimile: *[Signature]*

PART-II

MARKS OBTAINED										
Q.	1	2	3	4	5	6	7	8	9	10
(a)										
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Total										
Total Marks in Figures										Max. Marks
Total Marks in Words										

H O R T S 0 0 2

Paper Code

Signature of Evaluator

PART-III

Course: M.Sc. (Ag) (Horticulture)
 Session: 2024-25 Year/Semester: 1st sem
 Subject: Landscaping & Ornamental breeding

परीक्षार्थक का कोड College Code: EW02
 परीक्षा केंद्र का कोड Exam Centre Code: EW02

परीक्षा का प्रकार Type of Exam:
 Regular Ex. Student
 Private Back paper Exam

Paper Code: H O R T S 0 0 2
 Exam Date: 3 0 0 1 2 0 2 5
 Name of Candidate: M O H A S I F
 Father's Name: M D R A S H I D

E	W	0	2	E	W	0	2
A	A	0	0	A	A	0	0
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K	4	4	4	K	4	4	4
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S	7	7	7	S	7	7	7
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ANSWER BOOKLET NO.

10687152

H O R T S 0 0 2

Paper Code

PART-IV

परीक्षा का संख्या Enrollment Number: C S J M A 2 0 0 1 3 2 5 5 4 9

परीक्षार्थक संख्या Candidate's Roll Number: 2 5 0 8 8 0 0 0 0 3 3
 पेपर कोड Paper Code: H O R T S 0 0 2

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मा. उमापति

Signature of Candidate

V. Anam Pathi

Signature of Investigator

परीक्षा केंद्र-EW-02

C S Facsimile

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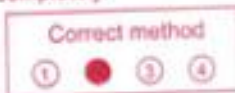
नोट: 1. परीक्षार्थक को निर्दिष्ट किया जाता है कि आचार्य अपने ही पुस्तक भाग पर अंकित सभी निर्देशों को सावधानीपूर्वक पढ़ें।
 2. गोलों में भरी जाने वाली प्रतिक्रियाएँ सभी उत्तरों से शुरू की जाएँ। 3. गोलों को काले या नीले बॉलपेन से भरा जाएँ।

INSTRUCTIONS TO THE CANDIDATE FOR FILLING PART-I

1. Read the instructions carefully given on the answer script and admit card.
2. Write Date of Exam, Shift, Paper Code & Name of Subject Correctly.
3. Write Name & Roll No. Correctly.
4. Write Semester & Branch Correctly.

INSTRUCTIONS TO THE CANDIDATE FOR FILLING PART-III

1. Use blue or black ball point pen for writing alphabets & numerals in Boxes.
2. Carefully study the example before you start marking.
3. As shown in the example below blacken the circles completely.



4. Make no Stray marks on this sheet.
5. **DO NOT WRITE OR MARK ON THE BAR CODE.**

IN ORDER TO AVOID UFM (UNFAIR MEANS):

1. The Roll No. and Answer Book no. found elsewhere or any other symbol found in the answer book will be treated as unfair means.
2. Any tampering of Bar Code and Booklet no shall be treated as Unfair Means.
3. Do Not bring the materials like slip of paper/mobile/digital diaries/ study material/ revision notes in examination hall. Possession of the mobiles/ digital diaries/ electronic watch and any other electronic gadget except memory less scientific calculator shall be considered as UFM case.
4. Do not keep or paste currency note in answer script it shall be consider as UFM.

अनुचित साधन से बचने हेतु:

1. उत्तर पुस्तिका के निर्देशित स्थान को छोड़कर अनुक्रमांक एवं उत्तरपुस्तिका का क्रमांक कहीं और न लिखें तथा कोई भी चिन्ह न बनायें क्योंकि यह अनुचित साधन प्रयोग की परिधि में आता है।
2. उत्तर पुस्तिका के बारकोड अथवा उत्तर पुस्तिका संख्या पर छेद करने पर अनुचित साधन प्रयोग माना जाएगा।
3. परीक्षा कक्ष में निम्न वस्तुएं साथ न लायें, जैसे लिखे हुए बागज के टुकड़े, मोबाइल, डिजिटल वाच, कोपी, पुस्तक यह सभी वस्तुएं जो अनुचित साधन के अन्तर्गत आती हैं। संबंधित प्रश्नपत्र में ही मेमोरी लेस साइट्रॉनिक कैल्कुलेटर ले जाने की अनुमति होगी।
4. उत्तर पुस्तिकाओं में रूपये न रखें न ही उत्तर पुस्तिका में चिपकायें। ऐसा करना अनुचित साधन प्रयोग की परिधि में आता है।

परीक्षार्थी के लिए निर्देश

1. प्रवेश पत्र एवं उत्तर पुस्तिका पर दिये गये निर्देशों को ध्यान से पढ़ें।
2. कवर पृष्ठ के दूसरी तरफ कुछ न लिखें।
3. उत्तर पुस्तिका के पृष्ठों पर दोनों तरफ लिखें।
4. प्रश्न पत्र पर अपने अनुक्रमांक के अतिरिक्त कुछ न लिखें।
5. प्रश्न पत्र कोड एवं प्रश्न पत्र कोड सावधानी पूर्वक लिखें।
6. अपनी स्थिति स्पष्ट लिखें।
7. उत्तर पुस्तिका के पृष्ठों की संख्या देखें। अगर उत्तर पुस्तिका में पृष्ठ (1-24) से कम है या फटे हुए हैं, तो परीक्षा शुरू होने के पूर्व दूसरी उत्तर पुस्तिका ले लें।
8. प्रश्नपत्र को देख, यदि प्रश्नपत्र के विषय कोड, विषय का नाम तथा प्रश्न में कोई त्रुटि है तो उसके परीक्षा शुरू होने के 30 मिनट के अन्दर कक्षा निरीक्षक को तत्काल सूचित करें, उसके बाद विश्वविद्यालय द्वारा कोई कार्यवाही नहीं की जायेगी।
9. प्रश्नों के उत्तर लिखने के लिये पेंसिल का प्रयोग न करें।
10. B कोपी या अतिरिक्त घाक नहीं दिया जायेगा।

INSTRUCTIONS TO THE CANDIDATE

1. Read the instructions carefully given on the Question Paper, Admit Card & Answer Script.
2. Do not write anything on back side of the cover page.
3. Write on both sides of pages of answer book.
4. Do not write anything on question paper except Roll Number.
5. Write Paper Code & Question Paper Id carefully.
6. CHECK the number of pages (1-32) or any other kind of damage in your answer script, if found than change the answer script immediately before the commencement of examination.
7. CHECK the Question Paper for any kind of discrepancy e.g. Subject Code, Subject Name and Question of the Question Paper during first THIRTY MINUTES of the commencement of the exam, so that it can be corrected in TIME. After that no. corrections shall be entertained by the university.
8. Do not use pencil for answering the question.
9. Write status correctly e.g. those appearing in carry over papers should fill in status as Carry Over. Those appearing as Ex-Students should fill in status as ex.
10. No supplementary answer book & graph paper will be provided.

INSTRUCTIONS TO THE CANDIDATE FOR FILLING PART-IV

1. Use blue or black ball point pen for writing alphabets & numerals in Boxes.
2. Use blue or black ball point pen for filling the circles.

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Note - If your Roll No. is of 10 digits. Please leave first three columns



Section - A

Ans of Ques - 1(A)

Xeriscaping - Xeriscaping is a method of gardening involving choosing of plants that can be maintained with little supplemental water.

Xeriscaping mainly includes cactus & succulents.

1. Cactus: Cactus are those plants having areoles & glaucous and can survive in water stress condition as their leaves transformed into thorns and they are used for decoration.

Suitable plants -
Astrophytum
Opuntia
Cholla
Palm
Echinocactus

2. Succulents: Succulents are also fleshy plants but they do not have areoles, freely in use or used for decoration.

Suitable plants -
Agave
Aloe
Sedum
Xero
Euphorbia

Advantages of Xeriscaping -

1. Control soil erosion
2. Separate plant zones



3. Efficient irrigation
4. Used for protection purpose.

Ans of Ques-1 (B)

Moon garden — Moon garden is a special type garden in which a pond is prepared in the middle of garden which captures the shadow of moon at night. Surrounding the pond a such type of white flowering plants which are planted to create a mass effect of white colour in night.

Suitable plants for moon garden —

Common name	Botanical name
1. Bella	Jasminum sambac
2. Harsinggar	Nyctandhes cinnabaralis
3. Raat rani	Cestrum nocturnum
4. Chandni Chandni	Eurodemia cinnabaralis
5. Brachberg	Strobilium floricola
6. Rubmani	Strobilium floricola

Do Not Write anything in this Portion



Ans of Ques-1(c)

Arch — Arches are semicircular structures placed at main entrance or in the middle of path and are decorated by beautiful climbers & creepers.

Usually the height of arches kept between 2 to 2.5 meters & width about 1 to 1.5 meters. But at Entrance gate arches are more high & wide.

Pergola — When a path or road is covered by several continuous arches in length and look like a tunnel is called Pergola. Beautiful climbers & creepers are trained over pergola.

Arch & Pergola material — Wood, stone, metal, concrete

Suitable climbers for Arch & Pergola —

Common name

Rakhiyal (Madhulata)

Ban madhvi

Begonia

Antigonon

Asparagus

Bougainvillea

Veronica

Botanical name

Rosifolia tinctoria

Jasminum auriculatum

Begonia venata

Antigonon leptopus

Asparagus plumosus

Bougainvillea spp.

Veronica elegans



Are of Ans - 100

Rock garden — Rock garden or Rockery is prepared in the corner of garden at mountain place (2-3 mtr high). The mounted soil is covered by rocks & stones, providing some space or crevices for growing plants in them. Generally less water require and low growing flowering plants are suitable for rock garden.

Rock garden Chandigarh by Nefertari Saini is a popular example of Rock garden.

Suitable plants —

1. Cactus : *Opuntia*, *Cereus*
2. Succulents: *Agave*, *Aloe* ✓ *Sedum*, *Heartleaf*, *Cressula*
3. Shrubs : *Cassia obata*, *Cassia biflora*, *Crossandra*
4. Annuals: *Salvia*, *Scabellium*, *Conditifl*, *Verbena*, *Eclipta*, *Nasturtium*.



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Ans of Q18 - 1 (C)

Terrarium — A terrarium is a transparent glass or plastic container with plants growing in it to make a miniature landscape.

The idea of terrarium garden was introduced by N. Bogdanov in 1842. It has open or closed top. The clear sided containers have no drain holes & usually has a clear top.

Terrarium containers of 100x50x50 cm³ sized are most suitable. Terrarium a special type indoor garden. When a terrarium is properly planted and located it can be source of supply for many years.

The soil of terrarium should be sterilized, clean & rich in organic matter. Dry soil should be add in terrarium containers.

Suitable plants —

Isis moss

Sansiveria

Maiden hair fern - Adiantum fern.

Venus hair fern

Ribbon plant

Creeping fig

Lycopodium

Poly:div

etc.



Ans of Qus-1 (F)

Tea garden — Tea garden is a type of Japanese garden. The Tea garden is divided into 3 sections:

1. Sotobori — Outer section
2. Maegi — Middle section or waiting area
3. Uchibori — Inner section or main garden

In Japanese garden, a beautiful house of 4-5 people capacity is made for tea ceremony. The height of door of house is kept low so that the guest enters the house with lowering the head. It is because the guest give up their ego space outside of the tea ceremony.

Suitable plants —

Evergreen: Pines, Abies, Junipers

Deciduous: Maple, Poplar, Mulberry, Shalix

Flowers: Chrysanthemum, Camellia, Lotus, Lily etc

Shrubs: Aucuba japonica, Lagerströmia indica, Gardenia florida.

Bamboo: Phyllostachys nigra, P. aciculata etc



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07

Section - B

Ans of Ques - 5

Annuals — Annuals of one seasonal flowers are the group of plants which complete their life cycle within a growing season.

Annuals are group of plants which attain their full growth from seed to ^{or} fruit in one season mostly in 3 to 6 months.

Classification of Annuals —

A. Based on growing season: In 3 groups

1. Winter season annuals
2. Summer season annuals
3. Rainy season annuals.

1. Winter season annuals — These annuals are able to tolerate low temperature. Sowing time is Sep-Oct and flowering time is Feb-March.

2. Summer season annuals — Sowing time is Feb-March and flowering time is May-July.

3. Rainy season annuals — Seed sowing is done in the month of June-July & flowering time is Sep-Oct.

Do Not Write anything in this Portion



A selected list of Winter season annuals —

Common name	Botanical name
Hollyhock	<u>Althea rosea</u>
Sweet alyssum	<u>Alyssum maritimum</u>
Sweet sultan	<u>Centroseia moschata</u>
Cardiylft	<u>Theris aurea</u>
Calendula	<u>Calendula officinalis</u>
Cosmos	<u>Cosmos bipinnatus</u>
Cosmos	<u>Dianthus caryophyllus</u>
Cosmos	<u>Tegetes erecta</u>
African marigold ✓	<u>Tegetes patula</u>
French marigold	<u>Callistephus chinensis</u>
Aster	<u>Gaillardia pulchella</u>
Gaillardia	<u>Petunia hybrida</u>
Petunia	

A list of Summer & Rainy season annuals —

Common name	Botanical name
Amaranthus	<u>Amaranthus cruentus</u>
Portulaca	<u>Portulaca grandiflora</u>
Kochia	<u>Kochia scoparia</u>
Sunflower	<u>Helianthus annuus</u>
Mexican sunflower	<u>Tithonia speciosa</u>
Balsam	<u>Impatiens balsamina</u>
Sadabahari	<u>Vinca rosea</u>
Cocks comb ✓	<u>Cocksia argentea</u>
Zinnia	<u>Zinnia elegans</u>



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09

B. Based on their use —

1. Bedding purpose — Dahlia, Balsam, Marigold, Pansy
2. Pot flowers — Candytuft, Calendula, Pansy, S. clypeum, Petaluma
3. Fragrance — Sweet pea, Sweet alyssum, Nasturtium, Carnation.
4. Cut flowers — Carnation, Aster, Salvia, Gerbera, Larkspur.
5. Loose flowers — Marigold, Fernie, Sunflower, Brillboadia
6. Hanging basket — Geranium, Nasturtium, Petunia, Pinks, Zinnia
7. Climbing — Sweet P. ✓, Nasturtium, Macraclanta
8. Shade loving — Salvia, Cineraria, Calendula, Petunia
9. Day flowers — Acaelinum, Heliozymum, Nigella, Carnation

C. According to Blooming —

1. Early Blooming : Bloom in 45-60 days
eg. Balsam, Amaranthus, Cosmos, Marigold.
2. Late blooming : Bloom in 60-90 days
eg. Dianthus, Hollyhock, Chrysanthemum



D. According to height —

	Medium	Tall
Deep 15-30 cm	30-75 cm	75-150 cm
Pansy	Balsam	Chrysanthemum
Rosehedge	Aster	Hollyhock
Candytuft	Sweet alyssum	Simpliciss
Calendula	Cerastium	Loosestrife
Sweet alyssum	Salvia	Amaranthus
English daisy	Kerf:	Dahlia

Transplanting — 20-25 DAS

Tall — 40x30 cm

Medium — 20x30 cm

Deep — 15x10 cm

Propagation — Usually by seeds.



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Section - C

Ans of Qus - 6

Lawn — When a piece of land is decorated with different grass spp. for beautification purpose is called lawn.

Lawn is the 'Green Cover of Perennial Grasses'.
Lawn is also known as 'Green Carpet for Landscape' & 'Heart of the Garden'.

J.B. Alcock design the first lawn at Rochester (USA) in 1880.

Quality of good lawn:

1. A lawn should be free from waterlogging in rainy season.
2. Lawn should free from weeds, insects & disease.
3. A lawn should be covered from green grass & offer a green.
4. Control the soil erosion.

Making of a lawn —

1. Selection of grass: Mainly two grasses.

A. Bermuda grass (*Cynodon dactylon*) — Hard in nature, quick growing, less water require & suitable for large areas.

Var. — Hairyfli, Kalbadya, Polna, Panama.

B. Korean grass (*Zoysia japonica*) — Well suited for small areas & home lawns.



Grasses according to season —

1. Warm season grass: Require temp above 10°C but 25-35°C opt.
eg. Bermuda, Kikuyu grass, Carpet grass, Buffalo grass.

2. Cool season grass: Growth start at 5°C but fast growth at 8-15°C.

eg. Kikuyu blue grass, Tall fescue, Chinese fescue.

Some grasses as *Oxalis triflora* & *Anacis officinalis* can grow in shade.

2. Site selection — Open sunny side is ideal for lawn.

3. Soil — Well drained, fertile, Sandy loam soil with 6-8 pH is good.
Broomrape the land at 2% slope in May-June.

4. Manures — FYM is avoided due to weed infestation but atleast 2 kg FYM / m² should use.
NPK @ 10:6:4 at 1 kg / 100 m² should use.

5. Seeding methods — In June at beginning of rain.

a. Seed — 25-30 kg seeds / ha for cool season grass & 10-12 kg seeds/ha for warm season grass. Seeds germinate within 30-45 days.



2. Dibbles - It is easy method of lawn making. In this the grass pieces with roots are planted by dibbles at 10×10 cm apart in July-Aug.

3. Tying - It is ~~the~~ very fast method but expensive in this step, a piece of cloth of 5 cm thickness with grass thickly grown over it of a pre exist lawn is cut into 30-40 cm long pieces & transferred to a new place where lawn has to be made.

4. Turf plastering - Grass is cut into pieces along with roots in 5-6 cm or mix with manure at 2:1 ratio. After it is spread mixture on soil & cover with 2 cm dry soil.

Maintenance of Lawn -

1. Mowing & Rolling - Mowing is done in summer & winter at 10-15 day interval and in rainy season at 7-8 di. Mowing is followed by rolling.

2. Irrigation - 10-12 day interval in summer, 15-20 day interval in winter & no irrigation in rainy days.

3. Weeds - Euphorbia hinds, Parthenoc, Kanna are major weeds. Spray Glyphosate or 2,4D @ 500g/ha for broad leaf weeds & Atrazine @ 1.5 kg/ha for narrow leaf weeds.



4. Disease — Feisty ring spot is a serious disease caused by *Basidiomyces* fungi. White stripes on leaves of grass turn brown.

Control — Bordo mixture at 450 PPM at 45 day interval.

5. Insects —

Termite: ✓ at chlorpyrifos 0.03%
White grub: 10-12 kg Phorate / ha
Sarthrum — ~~KPN~~ ~~KPN~~ ~~KPN~~

6. Scrapping — It is done in old lawns after 2-3 years in summer with 14 days on soil for proper aeration & good development of grass. After scrapping apply 20 gm NH_4NO_3 for healthy grass.



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19

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21

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