

University seat No.: _____

Centre: _____

Registration No. : _____

Sign. of Supervisor: _____

AGRICULTURAL UNIVERSITIES OF GUJARAT

1. Anand Agricultural University, Anand

3. Navsari Agricultural University, Navsari

2. Junagadh Agril. University, Junagadh

4. S.D. Agricultural University, S.K.Nagar

PART-A: Objective

Course No. : OTH 6.4/6.1

Course Name : Medicinal and Aromatic Crops

Credit : 2+1

Date : 21.06.2016 (Tuesday)

Time : 14.30 to 17.00 Hours

Marks : 40

Tick mark (✓) the appropriate option from the following

1. Which among the following crops is ideally suited for multistorey cropping system?

(a) Honey plant

(b) Datura

(c) Senna

(d) Cardamom

2. is the centre of origin of *Piper longum* Linn.

(a) South America region

(b) Indo_ Pakistan region

(c) Tropical Africa region

(d) Indo_ Malaya region

3. 'Leaf stripping' is common practice in _____

(a) Senna

(b) Honey plant

(c) Long pepper

(d) Cardamom

4. India ranks _____ in cardamom production in the world.

(a) First

(b) Fourth

(c) Tenth

(d) Second

5. Ginger variety 'Rio_de_Janeiro' is introduced from _____

(a) Cambodia

(b) China

(c) Peru

(d) Brazil

6. Directorate of Medicinal and Aromatic Plant Research is situated at _____

(a) Ajmer

(b) Anand

(c) Lucknow

(d) Calicut

7. Chief economical constituent of honey plant is _____

(a) Sennoside_C

(b) Piperine

(c) Xanthotoxin

(d) Sennoside_A

8. Medicinal plants are chief source of _____
 (a) Carbohydrate (b) Starch
 (c) Secondary metabolites (d) Fibre
9. Which among the following crops is dioecious by nature?
 (a) _____ (b) Honey plant
 (c) _____ (d) Cardamom
10. The ideal seed rate for direct sowing of ashwagandha in one hectare.
 (a) 3-5 kg (b) 10-12 Kg
 (c) 50-60 kg (d) 50-60 g
11. Which of the following is a member of Geraniaceae family?
 (a) *Gloriosa superba* (b) *Cymbopogon martinii* var. *Motia*
 (c) *Cymbopogon flexuosus* (d) *Pelargonium graveolens*
12. 'Trishna' is famous variety of _____
 (a) Palmarosa (b) Lemon grass
 (c) Java citronella (d) Geranium
13. _____ is the centre of origin of *Catharanthus roseus*
 (a) Mexico (b) Madagascar
 (c) China (d) India
14. Which among the following crops contain 'Curcumin' ?
 (a) Periwinkle (b) Anola
 (c) Turmeric (d) Clove
15. Which among the following crops is not propagated by seed?
 (a) *Cymbopogon winterianus* (b) *Phyllanthus amarus*
 (c) *Withania somnifera* (d) *Datura innoxia*
16. 'Marusudha' is a famous variety of _____
 (a) Rauvolfia (b) Anola
 (c) Guggal (d) Clove
17. 'Sugandhi', 'Pragati' and 'Neema' are famous varieties of _____
 (a) *Gloriosa superba* (b) *Cymbopogon martinii*
 (c) *Cymbopogon flexuosus* (d) *Pelargonium graveolens*
18. 'Prabal' is famous variety of _____
 (a) Periwinkle (b) Anola
 (c) Datura (d) Clove

19. The chief constituent of palmarosa oil is _____
 (a) Phyllanthin (b) Geraniol
 (c) Farnesol (d) Eugenol
20. Which plant contains anti-parkinson property?
 (a) Guggal (b) Mucuna
 (c) Senna (d) Rauvolfia
21. The planting distance of *Commiphora mukul* is _____
 (a) 2-3 m x 2-3 m (b) 6-8 m x 6-8 m
 (c) 45 cm x 60 cm (d) 10-12 m x 10-12 m
22. *Atropa belladonna* is cultivated in _____ climate
 (a) Temperate (b) Sub-Tropical
 (c) Tropical (d) Arid
23. PRL- purple and PRL- green is famous variety of _____
 (a) Liquorice (b) Phyllanthus
 (c) Datura (d) Ashwagandha
24. Which among the following crops is not belonging to Solanaceae?
 (a) Datura (b) Belladonna
 (c) Jethimadh (d) Ashwagandha
25. _____ part of cinchona is used in commercial trade.
 (a) Bark (b) Fruit
 (c) Root (d) Seed
26. Which among the following is also known as 'Kochin grass'?
 (a) *Gloriosa superba* (b) *Cymbopogon martinii* var. Motia
 (c) *Cymbopogon flexuosus* (d) *Pelargonium graveolens*
27. Which among the following crops is a threatened plant species, included in the Red Data Book (IUCN) and also over exploited species in India?
 (a) Belladonna (b) Ashwagandha
 (c) Guggal (d) Clove
28. _____ is called father of Ayurveda
 (a) Dhanvantri (b) Charaka
 (c) Jeevka (d) Surpala
29. Botanical name of pyrethrum is _____
 (a) *Chrysanthemum cinerarifolium* (b) *Cymbopogon martinii*
 (c) *Cymbopogon flexuosus* (d) *Rosa damacena*

30. _____ is/are important essential oil yielding families.
 (a) Rutaceae (b) Lamiaceae
 (c) Lauraceae (d) All of the above
31. _____ is used as safest bio-insecticide for food and meat industry
 (a) _____ (b) Pyrethrum
 (c) Belladonna (d) Geranium
32. Cloves contains about _____ % oil having 60-90% _____ compound in it
 (a) 20%, Eugenol (b) 10%, Eugenol acetate
 (c) 10%, Eugenol (d) All of the above
33. In Rauvolfia _____ is/ are important alkaloids are present
 (a) Reserpine (b) Serpentine
 (c) Ajmaline (d) All of the above
34. _____ is the largest producer of essential oil in the world
 (a) India (b) Kenya
 (c) France (d) Brazil
35. Recent method of extraction of essential oil from plants, where fragrance and flavour ingredients resemble their source is _____
 (a) Maceration (b) SCFE
 (c) Enfleurage (d) Steam hydro distillation
36. Sonamukhi and aloe are mainly grown in climate _____
 (a) Humid & sub-humid (b) Arid and semiarid
 (c) Temperate (d) Tropical
37. _____ gives essential oil from root parts.
 (a) Vetiver and *Acorus* (b) Tuberose and Palmarosa
 (c) Citronella and Mint (d) All of these
38. The CIMAP is located at _____
 (a) Jhansi (b) Lucknow
 (c) Anand (d) Dehradun
39. Which of the following medicinal crops is grown commercially in Gujarat
 (a) Isabgol (b) Opium
 (c) Sarpagandha (d) Honey plant
40. Indian lavender tree is botanically known as _____
 (a) *Lavendula angustifolia* (b) *Syzygium aromaticum*
 (c) *Bursera delpechiana* (d) *Rosa damascena*

41. Commercial part of clove is _____
 (a) Unopened flower buds (b) Seeds
 (c) Leaves (d) Flowers
42. Which among the following are constituents of Triphala Churna?
 (a) Baheda, Aonla, Harde (b) Guggal, Baheda, Harde
 (c) Sarpgandha, Baheda, Aonla (d) Guggal, Sarpgandha, Baheda
43. _____ is the botanical name of Kalmegh
 (a) *Andrographis paniculata* (b) *Mucuna puriens*
 (c) *Bursera delpechiana* (d) *Glycyrrizza glabra*
44. _____ is called father of modern medicine.
 (a) Geranium (b) Charak
 (c) Hippocrates (d) Darwin
45. Ayurveda is a Sanskrit words means _____.
 (a) Knowledge of life (b) Knowledge of God
 (c) Knowledge of human body (d) Knowledge of plant
46. The properties of chebulin present in Cebulic myrobalan.
 (a) Anticancer (b) Analgesic
 (c) Antispasmodic (d) Astringent action
47. The word 'Deadly nightshade' is a popularly used for _____.
 (a) Winter cherry (b) Belladonna
 (c) Liquorice (d) Dioscoria
48. The chief constituent of liquorice is _____.
 (a) Atropine (b) Vinblastine
 (c) Curcumin (d) Glycyrrhizin
49. For the treatment of scurvy disease _____ plant species is useful
 (a) Aonla (b) Long pepper
 (c) Dioscorea (d) Rauvolfia
50. Which of the following is a variety of medicinal yam?
 (a) Arka Sanjeevni (b) Arka Upkar
 (c) Akra Tinda (d) Arka Mahima
51. Which of the following crops is belongs to family Lamiaceae
 (a) Patchouli (b) Kalmegh
 (c) Sweet flag (d) Musk

52. 'True lavender oil' is obtained from _____
 (a) *Lavandula angustifolia* (b) *Lavandula spicata*
 (c) *Lavandula latifolia* (d) None of the above
53. Dioscorea is commercially propagated by _____
 (a) Corms (b) Root cutting
 (c) Seed (d) Suckers
54. 'Gulkand' is obtained from _____
 (a) Rose (b) *Mentha*
 (c) Tuberose (d) Hibiscus
55. Which of the following essential oil have strong rose like aroma?
 (a) Jasmine oil (b) Lemon oil
 (c) Geranium oil (d) Acorus oil
56. Which of the following *Mentha* species contain maximum menthol?
 (a) *M. Piperita* (b) *M. Arvensis*
 (c) *M. citrata* (d) *M. Spicata*
57. *Cymbopogon winterinus* is generally propagated by _____
 (a) Rooted slips (b) Grafting
 (c) Budding (d) Seed
58. Botanical name of 'Holy Basil' is _____
 (a) *Ocimum sanctum* (b) *Ocimum canum*
 (c) *Ocimum basilicum* (d) *Ocimum gratissimum*
59. Ashwagandha is mainly propagated through _____
 (a) Seed (b) Root cutting
 (c) Budding (d) Leaf cutting
60. Tapping is a common practice employed in _____
 (a) Clove (b) Sarpagandha
 (c) Cinnamom (d) Guggal
61. _____ is common spacing for clove plantation.
 (a) 6-7 m x 6-7 m (b) 10-12 m x 10-12m
 (c) 2-3 m x 2-3 m (d) 60-90 cm x 60-90 cm
62. Pamarosa oil is extracted from _____
 (a) *Cymbopogon martinii* var. Sofia (b) *Cymbopogon martinii* var. Motia
 (c) *Cymbopogon flexuosus* (d) *Cymbopogon pendulus*

63. *Ocimum kilimandscharium* is commonly called as _____
 (a) Camphor basil (b) Sacred basil
 (c) French basil (d) Clove basil
64. Economically useful part of Ambrette or 'Muskdana' is _____
 (a) Seed (b) Leaf
 (c) Root (d) Flower
65. Tropine alkaloids like scopolamine, hysyamine and atropine is present in _____
 (a) Datura (b) Mucuna
 (c) Ashwagandha (d) Bursera
66. Jasmine belongs to family _____
 (a) Lamiaceae (b) Oleaceae
 (c) Poaceae (d) Apocynaceae
67. Which is the part of Indian System of Medicine (ISM)?
 (a) Unani (b) Siddha
 (c) Ayurveda (d) All of these
68. Which medicinal crop gained worldwide recognition, being the source of anti-cancerous alkaloid?
 (a) Belladonna (b) Periwinkle
 (c) Isabgol (d) Acorus
69. Scented geranium is a native of _____
 (a) Cape Province in South Africa (b) South America
 (c) Indo Malayan region (d) Eurasia and pacific
70. The chief essential oil components of ocimum are _____
 (a) Menthol (b) Eugenol
 (c) Citronellol (d) Methyl cahvicol
71. Withanin is an important alkaloid obtained from which plant?
 (a) Belladonna (b) Sarpgandha
 (c) Datura (d) Ashwagandha
72. Datura is native of _____
 (a) India (b) USA
 (c) Japan (d) South Africa
73. Commercially useful part of *Glycyrrhiza glabra* is _____
 (a) Seed (b) Leaf
 (c) Root (d) Flower

74. Aspirin is derived from _____
(a) Willow bark (b) Cinnamom bark
(c) Clove bark (d) Cinchona bark
75. Essential oils are _____ by nature
(a) Non_volatile (b) Solid
(c) Volatile (d) None of above
76. The word "*Kasturi*" is associated with _____
(a) Musk (b) Metha
(c) Jasmine (d) Tuberose
77. Mysor, Malabar and Alleppy are varieties of _____
(a) Bursera (b) Geranium
(c) Lavender (d) Cardamom
78. Which crop is monocot among the following
(a) Acorus (b) Ginger
(c) Turmeric (d) All of the above
79. The NMPB (National Medicinal Plant Board) is under which ministry
(a) MoAYUSH (b) MoFE&CC
(c) MoA&FW (d) MoHRD
80. Family of *Abelmoschus moschatus* is _____
(a) Malvaceae (b) Rosaceae
(c) Solanaceae (d) Cucurbitaceae
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PART-B: SUBJECTIVE

Course No. : OTH 6.4/6.1

Course Name : Medicinal and Aromatic Crops

Credit : 2+1

Date : 21.06.2016 (Tuesday)

Time : 14.30 to 17.00 Hours

Marks : 40

Q.1(A) Define/ Explain the following: (Any Six)

(6.0)

- (a) Gum
- (b) Aromatic Plant
- (c) Secondary metabolites
- (d) Chewing stimulant
- (e) Absolute
- (f) Fixative
- (g) Purgative
- (h) Quinine
- (i) Pharmacies

Q.1(B) Give the scientific reason for the following (Any Four)

(4.0)

- (a) Generally Java citronella is propagated by vegetative methods
- (b) Before distillation, plant material of lemon grass must be cut into small pieces.
- (c) Geranium is used as main blending agent in rose oil.
- (d) Cardamom is called 'green gold'.
- (e) Pyrethrum is considered as one of the safest bio-insecticide
- (f) In Rauvolfia high root biomass is desirable.

Q.2 Write brief note on the following (Any Five)

10.0

- (i) Trellising (Bareja or Boroj) of betel vine
- (ii) Curing and polishing of turmeric
- (iii) Propagation of dioscoria
- (iv) Harvesting of liquorice
- (v) Myrobalans and their importance
- (vi) Differentiate between Java and Ceylon citronella
- (vii) Types of Mint and their essential oil content