Tick mark (✓) most appropriate option from the following.

Q. No.   Question
1.  The power of a tractor is expressed usually in terms of
(a) HP  (b) Joule
(c) Watt (d) None of above

2.  The average force that bullock can exert
(a) 1/5th of its body weight (b) 1/20th of its body weight
(c) Half of its body weight (d) 1/10th of its body weight

3.  Renewable energy sources of energy are
(a) exhaustible (b) inexhaustible
(c) nuclear based only (d) biogas based only

4.  An average pair of bullock can develop the power up to
(a) 1 hp  (b) 0.1 hp
(c) 2.5 hp (d) 0.5 hp

5.  I.C. Stand for
(a) Internal conflict (b) Internal Combustion
(c) Integrated circuit (d) None of these

6.  The engine in which the fuel is burnt outside the engine cylinder is known as
(a) Electric motor (b) IC engine
(c) External Combustion engine (d) None of these

7.  Thermal efficiency of petrol engine varies from
(a) 32 to 38% (b) 50 to 65%
(c) 25 to 32% (d) 15 to 25%

8.  The connecting rod in an engine is used to convert
(a) Reciprocating motion of piston into rotary motion of crankshaft
(b) Rotary motion of piston into reciprocating motion of crankshaft
(c) Rotary motion of piston into oscillatory motion of crankshaft
(d) Oscillatory motion of piston into rotary motion of crankshaft

9.  In diesel engine the component placed at the place of spark plug
(a) Injector (b) intake valve
(c) exhaust valve (d) piston rod

10.  Camshaft is used to operate
(a) Piston (b) crankshaft
 (c) Connecting rod (d) Valves
IC engine is classified on the basis of
(a) Based on fuel  
(b) Based on stoke
(c) Based on ignition  
(d) All of these

In this engine, during suction stroke, only air is entered into the cylinder and compressed.
(a) Diesel engine  
(b) Petrol engine
(c) Gas engine  
(d) None of these

There are no valves in this type of engine.
(a) Two stroke engine  
(b) four stroke engine
(c) four stroke diesel engine  
(d) None of these

The thermal efficiency of petrol engine is ........... than that of diesel engine.
(a) More  
(b) Less
(c) Standard  
(d) Equivalent

The single cylinder engine generally used in
(a) Stationery engine  
(b) Truck engine
(c) Tractor engine  
(d) Motor car engine

Internal combustion engine is invented by
(a) James watt  
(b) Rudolf diesel
(c) Hudson  
(d) Nicolas Otto

The compression ratio of the diesel engine is in the order of
(a) 9 to 13:1  
(b) 14 to 20:1
(c) 4 to 8:1  
(d) 21 to 30:1

Engine, in which one cycle is completed in two revolutions of crank shaft, is called
(a) 2-stroke cycle engine  
(b) 1/2 stroke cycle engine
(c) 4 stroke cycle engine  
(d) none of the above

Engine, in which one power stroke takes place for every one revolution of crankshaft.
(a) two stroke  
(b) four stroke
(c) One stroke  
(d) None of the above

In 2 stroke engine the 1st stroke denotes
(a) suction + compression  
(b) suction
(c) compression  
(d) Power + exhaust

T.D.C stand for
(a) Top dead centre  
(b) Three dead centre
(c) Top demo centre  
(d) Top deal centre

It is the linear distance traveled by the piston from Top dead centre (TDC) to Bottom dead centre (BDC).
(a) Bore  
(b) Diameter
(c) Stroke  
(d) None of these

Stroke bore ratio varies between
(a) 1 to 2  
(b) 1 to 1.45
(e) 1 to 2.5  
(d) 1 to 3.5

L.H.P. indicates the power on
(a) Piston  
(b) Crankshaft
(c) Drawbar  
(d) None of the above

Mechanical efficiency of an I. C. engine is the ratio between
(a) BHP/IHP  
(b) IHP/BHP
(c) FHP/BHP  
(d) FHP/BHP
Formula for I.H.P. for 4-stroke engine is
(a) (PLAN/4500) x n/2
(b) (PLAN/4500) x n/4
(c) (PLAN/4500)
(d) (PLAN/75) x n/2

27 The violent noise heard in engine during combustion is called
(a) Wearing
(b) Knocking
(c) Scavenging
(d) Detonation

The purpose of governor is
(a) To maintain the constant speed of engine at varying load
(b) To protect engine and attached equipments against high speed
(c) Both a & b
(d) None of the above

Purpose of cooling system
(a) maintain optimum temperature of engine
(b) dissipate surplus heat for protection of engine
(c) maintain the lubricating property of the oil
(d) All of these

30 Thermostat valve is used in
(a) Steam engine
(b) Air cooled engines
(c) Water cooled engines
(d) None of the above

Air cooled engine has
(a) Water jacket
(b) Fins
(c) Valves
(d) Water pump

32 Purpose of lubrication is
(a) Reducing frictional effect
(b) Sealing effect
(c) Cooling effect
(d) All of these

33 At farms, the self propelled power unit, is the
(a) Tractor
(b) Bullock
(c) Man
(d) All of these

34 For operating farm machines, the tractor engine is used, through
(a) P. T. O.
(b) Belt and pulley
(c) Pulleys
(d) Both (a) & (b)

35 Thermal efficiency of diesel engine varies from
(a) 30 to 38%
(b) 50 to 65%
(c) 25 to 32%
(d) 15 to 25%

36 Depreciation of a machine value is generally estimated in term of
(a) Rs. per hour
(b) Percent
(c) Useful life
(d) Working hour

37 Track/Chain type tractors, are
(a) Crawler tractor
(b) Prime mover
(c) Wheel tractor
(d) Power tiller

38 The power of a tractor measured at the end of draw bar, is called
(a) DBHP
(b) H.P
(c) BHP
(d) Belt horse power

39 The tractors with pneumatic wheels, are called
(a) Prime mover
(b) Power tiller
(c) Wheel tractor
(d) Crawler tractor

40 Hydraulic system in tractor is mainly used for
(a) PTO drive
(b) Operating three point hitch
(c) Both (a) & (b)
(d) None of the above
Tillage leads to
(a) Reduce soil erosion  (b) Proper aeration in soil
(c) Destruction of weeds  (d) All of these

M.B. Plough is used as
(a) Secondary tillage  (b) Intercultural tillage
(c) Primary tillage  (d) Any other tillage implement

Finer operation performed for seedbed preparation is
(a) Primary tillage  (b) Secondary tillage
(c) Strip tillage  (d) Rotary tillage

The machine used for seed bed preparation, weed control, mixing of soil with crop residues and fertilizer is called
(a) M.B. Plough  (b) Disc plough
(c) Rotavator  (d) Leveler

One of the most common implements used by Indian farmers
(a) Indigenous plough  (b) M.B. plough
(c) disc plough  (d) Harrow

It is used to maintain uniform depth of implements
(a) Drive wheel  (b) Free wheel
(c) Gauge wheel  (d) None of these

Share is the part of
(a) Disc plough  (b) M.B. plough
(c) Harrow  (d) Reaper

The function of M.B. plough
(a) Cutting the furrow slice  (b) Lifting the furrow slice
(c) turning the furrow slice  (d) All of these

Disc angle in standard disc plough varies between
(a) 5° - 15°  (b) 15° - 25°
(c) 32° - 35°  (d) 42° - 45°

Disc angle adjustment influence
(a) depth of cut  (b) Width of cut
(c) Soil break up  (d) Direction of travel

It is the angle at which the plane of the cutting edge of the disc is inclined to vertical plane.
(a) Disc angle  (b) Tilt angle
(c) Crown angle  (d) Gang angle

Total force exerted upon the implement by power unit is called
(a) Pull  (b) Draft
(c) Side draft  (d) Unit draft

The fuel is ignited in diesel engine by
(a) Spark plug  (b) Heat of compression
(c) both (a) & (b)  (d) None of above

Harrow is used as
(a) Secondary tillage  (b) Intercultural tillage
(c) Primary tillage  (d) Any other tillage implement

It is a disc harrow comprising of four gangs in which each gang can be angled in opposite direction is known as
(a) Standard disc harrow  (b) Tandem disc harrow
(c) Offset disc harrow  (d) None of these
56. Penetration of disc harrow can be increased by
   (a) Decreasing weight  (b) Decreasing speed
   (c) Increasing weight  (d) Increasing speed
57. The blade harrows popularly known as
   (a) Khurpa  (b) Bhakar
   (c) Plough  (d) Kudali
58. Cultivator is used as
   (a) Secondary tillage  (b) Intercultural tillage
   (c) Primary tillage  (d) Any other tillage implement
59. It usually refers to the churning of soil in the presence of excess water is known as
   (a) Tillage  (b) Irrigation
   (c) Puddling  (d) Sowing
60. Purpose of puddling is
   (a) To reduce leaching of water  (b) To kill weeds
   (c) To facilitate the transplanting  (d) All of these
61. The best implement for preparation of paddy field is
   (a) Cultivator  (b) Harrow
   (c) Puddler  (d) Plough
62. It is a machine for placing the seeds in a continuous flow in furrows at uniform rate is known as
   (a) Seed drill  (b) Harrow
   (c) Rotavator  (d) None of these
63. Which machine maintain the plant to plant as well as row to row distance
   (a) Dibbler  (b) M. B. Plough
   (c) Planter  (d) Seed cum fertilizer seed drill
65. If the speed of travel of seed drill is double, the seed rate is
   (a) Same  (b) Double
   (c) Half  (d) Quarter
66. The most common type of metering device is
   (a) Internal double run type  (b) Cup feed type
   (c) Fluted roller  (d) Brush feed mechanism
67. The procedure of testing the seed drill for correct seed rate is called
   (a) Manipulation  (b) Collection
   (c) Calibration  (d) None of these
68. It is a machine to apply fluids in the form of droplets.
   (a) Sprayer  (b) Duster
   (c) Seed drill  (d) None of these
69. ASPE are famous for manufacturing
   (a) Tractors  (b) Power tillers
   (c) Ploughs  (d) Sprayers
70. The main functions of sprayer
   (a) To break the liquid into droplets  (b) To distribute uniformly over the plants
   (c) To regulate the amount of liquid  (d) All of these
71. It is a machine to apply chemical in dust form.
   (a) Sprayer  (b) Duster
   (c) Seed drill  (d) None of these
72. A machine to cut herbage crops and leave them in the field is called
   (a) Combine (b) Mower 
   (c) Harvester (d) Thresher
73. Sickle is a
   (a) Harvesting tool (b) Reaper 
   (c) Mower (d) Scissoring tool
74. Harvesting operation refers to the cutting of crops
   (a) Under the soil (b) Above the soil
   (c) By combine only (d) Both (a) & (b)
75. The most popular weeding tool amongst the small farmers
   (a) Cono weeder (b) Wheel hoe
   (c) Paddy weeder (d) Khurpa
76. The device used to connect and disconnect the tractor engine from the transmission gears and drive wheels is called
   (a) Clutch (b) Brake 
   (c) Gear box (d) differential
77. Dimension of unit draft
   (a) kg/cm² (b) kg/hr
   (c) kg/km (d) None of these
78. P.T.O. Stand for
   (a) Public transport office (b) Power take off
   (c) Power transport office (d) None of these
79. Functions of seed drill
   (a) To carry the seeds (b) To open furrow to an uniform depth
   (c) To place the seed in furrows (d) All of these
80. In computation of ‘depreciation’ of machine value, the salvage value is taken as
   (a) 10 % of operating cost (b) 10 % of capital investment
   (c) 10 % of fuel cost (d) 10 % of lubrication cost
Q. 1 Tick mark (\(\checkmark\)) against most appropriate option from the following.

1. Vertical teaching is in case of
   (a) Formal Education
   (b) Informal Education
   (c) Non-formal Education
   (d) None of these

2. Agricultural Technology Information Centre was started in India
   (a) 1996
   (b) 1990
   (c) 1998
   (d) 1995

3. Which of the following is not a key feature of T & V system
   (a) Professionalism
   (b) Time bound work
   (c) Single line of command
   (d) Farming system research

4. An outline of activities arranged chronologically to enable efficient execution of entire programme is called
   (a) Monitoring
   (b) Plan of work
   (c) Statement of problem
   (d) Calendar of work

5. It is a fundamental truth
   (a) Aim
   (b) Objective
   (c) Goal
   (d) Principle

6. The tenure of Gram Panchayat is
   (a) 3 years
   (b) 5 years
   (c) 4 years
   (d) 6 years

7. The president of the Gram Sabha is
   (a) Sarpanch
   (b) Talati
   (c) Upsarpanch
   (d) TDO

8. The main objective of rural development is
   (a) Increasing production
   (b) Raise standard of living of rural people
   (c) Increasing productivity
   (d) Increasing empowerment

9. It is understood information possessed by an individual
   (a) Literacy
   (b) Data
   (c) Knowledge
   (d) Facts

10. It is also known as Self Employment Programme
    (a) JRY
    (b) TRYSEM
    (c) SGSY
    (d) IRDP

11. It is competency of using knowledge efficacy
    (a) Attitude
    (b) Knowledge
    (c) Skill
    (d) Education
12. Community Development Programme was started in India
   (a) 1952 (c) 1950
   (b) 1949 (d) 1953

13. Broad Based Extension System was first introduced in
   (a) Karnataka (c) Gujarat
   (b) Rajasthan (d) Tamilnadu

14. It is a "Single Window Support System"
   (a) ATMA (c) ATIC
   (b) NATP (d) IRDP

15. The word “Extension” is derived from the language
   (a) Greek (c) Latin
   (b) French (d) German

16. It is never ending process by which an individual learns through daily experiences
   (a) Non formal education (c) Education
   (b) Informal education (d) Formal education

17. Prime Minister Rojgar Yojana (PMRY) was started in the year
   (a) 1992 (c) 1999
   (b) 1993 (d) 1979

18. The participation of people in extension programme is
   (a) Compulsory (c) Both (a) & (b)
   (b) Voluntary (d) None of these

19. Notion or idea or a way in which you can see a thing in your mind is
   (a) Fact (c) Concept
   (b) Definition (d) Theory

20. The concept of Extension work denotes
   (a) Whole structure (c) Organization
   (b) Job (d) Process

21. To develop leadership among people is considered as
   (a) General objective (c) Specific objective
   (b) Fundamental objective (d) Immediate objective

22. The problem of low level of education in rural development is related to
   (a) Agricultural (c) Economic
   (b) People (d) Administrative

23. ATMA is operated at
   (a) State level (c) National level
   (b) District level (d) None of these

24. Extension basically is two way process between
   (a) Researcher and Planner (c) Farmers and Researchers
   (b) Teachers and Planners (d) Researchers and Teachers

25. Planning commission appointed a committee for Panchayati raj was headed by
   (a) Jivraj Mehta (c) Mohansing Mehta
   (b) Damodar Mehta (d) Balvant rai Mehta

26. The basic philosophy of extension is to teach people
   (a) How to do (c) When to do
   (b) What to do (d) Where to do

27. In which state Panchayati Raj was first implemented
   (a) Andhra Pradesh (c) Maharashtra
   (b) Bihar (d) Rajasthan

28. How many contact farmers are covered by one VLW at every fortnight ?
   (a) 800 (c) 80
   (b) 1000 (d) 100

29. An extension worker helps farmers to attain desirable changes in their
   (a) Temperament (c) Wealth
   (b) Behaviour (d) Health
30. The Erawan Pilot Project was started by (a) Spencer Hatch (c) F. L. Brayne  
   (b) Daniel Benor (d) Albert Mayer  
31. The Fakta Development Scheme was implemented in (a) Madras (c) Rajasthan  
   (b) Bihar (d) UP  
32. The Sriniketan Project was started by (a) S. K. Dey (c) Vinoba Bhave  
   (b) Rabindranath Tagore (d) Mahatma Gandhi  
33. The T & V System is also known as (a) Lab to land system (c) World Bank system  
   (b) ICAR system (d) Benor System  
34. The agency assisted initially launching Training and Visit System (a) Government of India (c) ICAR  
   (b) World Bank (d) USAID  
35. It is the district level agency implementing IRDP (a) DRDA (c) IRDA  
   (b) KVK (d) ATMA  
36. The innovative institute for vocational training to farmers and extension functionaries by ICAR is (a) SAUs (c) Farmers club  
   (b) SSK (d) KVK  
37. The first KVK was established in India at (a) Pondicherry (c) Vardha  
   (b) Udaipur (d) Radheja  
38. It helps to promote women empowerment (a) SHG (c) Farmer Organization  
   (b) ATIC (d) Co-operative  
39. The concept of KVK was recommended by (a) Jivraj Mehta (c) Man Mohan Singh  
   (b) Jagjivan Ram (d) Mohansingh Mehta  
40. Panchayati Raj was implemented in Gujarat state in the year (a) 1959 (c) 1962  
   (b) 1960 (d) 1963  
41. The scheme is to provide finance and credit to women below poverty line for income generation (a) RMK (c) ICDS  
   (b) SGSY (d) DWCRA  
42. It is a sub-plan of Integrated Tribal Development Programme (a) ICDS (c) IDTA  
   (b) NWDP (d) TARP  
43. Learners are homogenous in case of (a) Formal Education (c) Non formal Education  
   (b) Informal Education (d) Adult Education  
44. It is statutory body of adult people of the village (a) Panchayat (c) Panchayati Raj  
   (b) Gram Sabha (d) Gram Panchayat  
45. MFAL is implemented in (a) 1975 (c) 1972  
   (b) 1970 (d) 1978  
46. Marthandam project was started in (a) 1918 (c) 1921  
   (b) 1946 (d) 1948
47. Sarvodaya scheme was started by
   (a) Mohanlal Gandhi  (c) Raindra Nath Tagore
   (b) Vinoba Bhave   (d) Maulana Azad

48. National Extension Service was started by
   (a) Government of India  (c) Madras Government
   (b) Government of Gujarat (d) ICAR

49. Training and Visit system was started in India in the year
   (a) 1974  (c) 1961
   (b) 1959  (d) 1952

50. Gujarat celebrate its establishment day on
    (a) 2nd October  (c) 2nd November
    (b) 1st May     (d) 1st February

51. It is bottom up approach
    (a) ATIC  (c) T & V System
    (b) IRDP   (d) ATMA

52. It is a feeling behaviour
    (a) Attitude (c) Skill
    (b) Knowledge  (d) Behaviour

53. The process of bringing desirable change in human behaviour is
    (a) Communication  (c) Learning
    (b) Teaching      (d) Education

54. Objectives means
    (a) Final results  (c) Impact of programme
    (b) Outcomes    (d) Direction of movement

55. The democratic decentralized system is also known as
    (a) ICAR System  (c) Single Window System
    (b) Panchayati Raj (d) T & V System

56. The extension work must be based on
    (a) Need and interest of the people  (c) Interest of local leaders
    (b) Interest of BDO  (d) None of these

57. A good extension programme should be
    (a) Rigid  (c) Both (a) & (b)
    (b) Flexible   (d) None of these

58. The grass root level extension worker in T & V System
    (a) AFO  (c) Joint Director
    (b) VLW   (d) SMS

59. Son of carpenter learns carpentry from his father in his work. This is example of
    (a) Formal education  (c) Nonformal education
    (b) Informal education  (d) Adult education

60. It is also known as ‘Package Programme’
    (a) IRDP  (c) SFAL
    (b) T & V System  (d) IADP

61. A blue print for action is
    (a) Plan  (c) Project
    (b) Programme   (d) None of these

62. It is governance of the people, by the people and for the people
    (a) Autocracy  (c) Democracy
    (b) Decentralization  (d) All of these

63. The lower tier of Panchayati Raj is
    (a) Gram Panchayat  (c) District Panchayat
    (b) Taluka Panchayat  (d) Gram Sabha

64. It is the type of education in which all power goes to learners
    (a) Class room Education  (c) Formal Education
    (b) Non formal Education   (d) Informal Education
65. Small Farmers Development Agency was started in
   (a) 1972  (c) 1970
   (b) 1973  (d) 1974

66. Change in knowledge is known as
   (a) Cognitive change  (c) Effective change
   (b) Psychomotor change  (d) Physical change

67. "Never do anything yourself that you can get someone to do for you". It relates to the principle of
   (a) Satisfaction  (c) Cultural Change
   (b) Leadership  (d) Learning by Doing

68. Prime Minister Rozgar Yojana strategy is embedded with
   (a) BPL people  (c) Educated unemployed youth
   (b) Tribal people  (d) Rural women

69. The distance in any given direction one expects to go during a given period of time
   (a) Aim  (c) Goal
   (b) Objective  (d) Principle

70. The main responsibility of extension service is with the
   (a) Department of Agriculture  (c) ICAR
   (b) SAUs  (d) NGOs

71. Principle of extension education is
   (a) Learning by doing  (c) Learning by seeing
   (b) Learning by reading  (d) Learning by hearing

72. The basic unit of extension work is
   (a) Individual  (c) Society
   (b) Family  (d) Community

73. It is the process to check the programme is on right path
   (a) Evaluation  (c) Planning
   (b) Implementation  (d) Monitoring

74. Answers to what, when, where, by whom and how the job will be done is known as
   (a) Calendar of work  (c) Statement of problem
   (b) Plan of work  (d) Monitoring

75. Govt of India had launched HYVP in
   (a) 1963-64  (a) 1966-67
   (b) 1956-57  (b) 1968-69

76. It is a primary unit of local self government
   (a) Gram Sabha  (c) Taluka Panchayat
   (b) Gram Panchayat  (d) District Panchayat

77. What implies a gap between the existing and desirable situation?
   (a) Need  (c) Wish
   (b) Desire  (d) All of these

78. IVLP was started in
   (a) 1996  (c) 1998
   (b) 1997  (d) 1994

79. ATMA is mainly related with
   (a) Single Window System  (c) FIG
   (b) Professionalism  (d) Single line of command

80. Integrated Child Development Scheme was started in
   (a) 1972  (c) 1975
   (b) 1978  (d) 1980
Q.1 Tick Mark (✓) against correct answer

1. A marketing function which tends to regulate the supply of a product and provide a stable market price is _______
   (a) Transporting  (b) Processing  (c) Storing  (d) Grading

2. Which of the following marketing intermediaries is more common in regulated markets?
   (a) Farmer  (b) Commission agent  (c) Retailer  (d) Broker

3. In which market, future sale and purchase of commodities will place at current time _______.
   (a) Forward  (b) International  (c) Perfect  (d) Spot

4. Market surplus of produce include _______.
   (a) Traded produce only  (b) Stocked produce only  (c) Tradable produce  (d) none

5. Which of the following falls under facilitative middlemen in the regulated markets?
   (a) Broker  (b) Commission agent  (c) Wholesaler  (d) weigh men

6. Support prices of agricultural commodities are recommended by _______.
   (a) NAFED  (b) ICAR  (c) FCI  (d) CACP

7. Market prices are settled by pressing the fingers under cover of piece of cloth in _______ method of sale.
   (a) Sale by sample  (b) Hatha system  (c) Closed tender system  (d) Moghum sale

8. The market functionaries, who take risk in the marketing with a view of making profit is _______.
   (a) Merchant middlemen  (b) Agent middlemen  (c) Facilitative middlemen  (d) Speculative middlemen

9. Risk arising out of a change in the Government’s policy is known as _______.
   (a) Price risk  (b) Quality risk  (c) physical risk  (d) institutional risk

10. In which method of sale, prices are fixed by mutual agreement?
    (a) Dara sale  (b) Moghum sale  (c) Private negotiations  (d) Closed tender system

11. The market in which permanent and durable goods are traded is _______.
    (a) long period market  (b) short period market  (c) secular market  (d) all

12. Which of the following is having only negative relationship with marketable surplus?
    (a) size of holding  (b) price  (c) production  (d) size of family

13. Which of the following is considered as 'protector of National wealth'?
    (a) Processing unit  (b) Transportation  (c) Warehousing  (d) Market information

14. The Government will announce the MSP for the crops at time of _______.
    (a) before sowing season  (b) during crops growth  (c) marketing  (d) harvesting

15. Which of the following middlemen take the title of the goods in the market?
    (a) Merchant middlemen  (b) Agent middlemen  (c) Facilitative middlemen  (d) all

16. Which of the following statement is correct with respect to monopolistic competition?
    (a) Infinite number of sellers dealing with homogenous goods
    (b) Infinite number of sellers dealing with heterogenous goods
    (c) Large number of sellers dealing with homogenous goods
    (d) Large number of sellers dealing with heterogenous goods

17. At time of distress sales _______.
    (a) Marketed surplus > Marketable surplus  (b) Marketed surplus < Marketable surplus
    (c) Marketed surplus = Marketable surplus  (d) Zero Market surpluses
18 In which following markets, the buyers and sellers participate in large number?
(a) Local market (b) Primary wholesale market
(c) Secondary wholesale market (d) Terminal market

19 The market information pertaining to market arrivals, prices demand for the commodities etc., on the basis of past period refers to _______.
(a) Market news (b) Market intelligence (c) Communication (d) Market extension

20 Compared to paddy, the marketable surplus of cotton is _______.
(a) High (b) Low (c) Infinity (d) Zero

21 If speculators make profits in the business through creating artificial scarcity of commodities, it is called _______.
(a) Speculation proper (b) Hedging (c) Forward trading (d) Illegitimate speculation

22 Farmer-Processor linkages can best had from _______.
(a) Regulated markets (b) Cooperative marketing
(c) Contract farming (d) Direct Marketing

23 The main objective of speculative trade is _______.
(a) Maximization of profits (b) Minimization of price risk
(c) Reduction in transaction costs (d) None

24 When one firm gains control over other firm performing similar type of functions, it is called _______.
(a) Conglomeration (b) Vertical integration
(c) Horizontal integration (d) Spatial integration

25 Present Director of General of WTO is _______.
(a) Pascal Lamy (b) Roberto Azevedo (c) Barack Obama (d) Narendra Modi

26 In which of the following purchase and sale of commodities are always opposite in direction?
(a) Speculation proper (b) Hedging (c) Forward trading (d) Illegitimate speculation

27 FCI was established in the year _______.
(a) 1965 (b) 1955 (c) 1945 (d) 1975

28 FCI aims at procurement of produce from the farmers/traders mainly for _______.
(a) Stabilizing the prices (b) Exporting the produce
(c) Maintaining buffer stocks (d) Scientific storage of produce

29 For which of the following crop, MSP is not announced?
(a) Jute (b) Sunflower (c) Cotton (d) Chillies

30 Cooperative marketing in India has _______ tier structure.
(a) two (b) three (c) single (d) none

31 Price spread includes _______.
(a) Marketing costs (b) Marketing margins (c) Both (a) & (b) (d) None

32 If one firm assumes several functions/activities under unified management, which are not directly related to each other, it is called _______.
(a) Conglomeration (b) Forward integration
(c) Horizontal integration (d) Backward integration

33 The marketing cost of goods sold in lean season is _______ than in peak season.
(a) lower (b) higher (c) equal (d) None

34 Cooperative marketing was not successful in India except _______.
(a) Cotton (b) Edible oil (c) Pulses (d) Milk

35 The stock of food grains maintained by the Government to ensure its supply at times of emergency situations to the needy population is called _______.
(a) Buffer Stock (b) Storage (c) Marketable surplus (d) None

36 _______ integration occurs when a firm performs more than one activity in the sequence of marketing process.
(a) Conglomeration (b) Vertical integration
(c) Horizontal integration (d) Spatial integration

37 For durable goods, under normal pricing conditions _______.
(a) Marketed surplus > marketable surplus (b) Marketed surplus < marketable surplus
(c) Marketed surplus = marketable surplus (d) Zero Market surpluses
38. Which of the following marketing function is gaining more importance in India in the context of export trade of agricultural commodities?
   (a) Transportation    (b) storage    (c) Processing    (d) Method of sale

39. Which of the following is/are the components of market structure?
   (a) Concentration of market power    (b) Degree of integration
   (c) Degree of product at differentiation    (d) All

40. The act of holding and preserving the farm commodities from the time of harvest till their final consumption is known as ________.
   (a) processing    (b) grading    (c) storage    (d) assembling

41. The agent of the Government for purchase, sale, store and distribution of agriculture commodities and input is ________.
   (a) NAFED    (b) FCI    (c) SCB    (d) PACS

42. Individuals who do not have physical control on the product, but render personal services are known as ________.
   (a) Speculative middlemen    (b) commission agents    (c) brokers    (d) Wholesalers

43. Which one of the following method is widely used to determine MSP?
   (a) Parity formula    (b) Moving averages    (c) Cost of production    (d) None

44. Warehousing corporation was established to ________.
   (a) Undertake scientific storage    (b) construct warehouse
   (c) subscribe share capital of SWC    (d) all

45. Wholesalers and retailers fall under ________ middlemen.
   (a) Merchant    (b) Agent    (c) Facilitative    (d) Speculative

46. The largest food grain procurement agency at national level is ________.
   (a) NAFED    (b) FCI    (c) NABARD    (d) Warehousing corporation

47. In Agril. marketing finance, ________ % of value of produce is given as loan amount to the beneficiary.
   (a) 25    (b) 60    (c) 75    (d) 85

48. AGMARK seal is compulsory for ________ produce.
   (a) Food grains    (b) Imports    (c) Exports    (d) edible oils

49. Pucca arhatiyas function on behalf of ________.
   (a) farmers    (b) traders    (c) brokers    (d) all

50. In short period market prices are governed by ________.
   (a) demand    (b) supply    (c) Both    (d) none

51. Indian Standards Institution was renamed as Bureau of Indian Standards in the year ________.
   (a) 1950    (b) 1947    (c) 1965    (d) 1987

52. AGMARK Act was passed in the year ________.
   (a) 1966    (b) 1937    (c) 1933    (d) 1947

53. The present Chairman of CACP is ________.
   (a) Dr. Ashok Vishandass    (b) Kapil Sibal
   (c) Finance Minister    (d) V. R. Patel

54. Which of the following offers a sort of price guarantee on the part of farmers to cultivate the crop?
   (a) Procurement price    (b) Issue price    (c) Equilibrium price    (d) MSP

55. NAFED was established in the year ________.
   (a) October, 1958    (b) September, 1958    (c) November, 1958    (d) December, 1958

56. In general, farmers and traders do not show interest to supply the produce to FCI for its procurement because ________.
   (a) MSP > Procurement price    (b) Procurement price > Market price
   (c) Procurement price < Market price    (d) Procurement price < Issue price

57. Which of the following is an example of Conglomeration?
   (a) Cooperative farming    (b) A wholesaling function assuming the function of retailing
   (c) Godrej industries    (d) A wholesaling function assuming the function of assembling the produce
58 Two markets are said to be spatially integrated, if the price difference of commodities between the two markets is ____________.
   (a) Less than transportation cost  (b) Less than storage cost
   (c) More than transportation cost  (d) More than storage cost

59 The main objective of hedging is ____________.
   (a) Reduction in transportation cost (b) Minimization of price risk
   (c) Maximization of profit       (d) None

60 The marketing channel for brinjal in Rythu bazaar is ____________.
   (a) Farmer -- Local wholesaler -- Retailer -- Consumer
   (b) Farmer -- Commission agent -- Local wholesaler -- Retailer -- Consumer
   (c) Farmer -- Retailer -- Consumer
   (d) Farmer -- Processor -- Retailer -- Consumer

61 For small farmers, the marketed surplus is ____________.
   (a) Higher  (b) lower  (c) zero  (d) none

62 Headquarters of DMI is located at ____________.
   (a) Hyderabad  (b) Faisalabad  (c) Mumbai  (d) Faridabad

63 The first state Warehousing Corporation was set up in ____________.
   (a) Bihar, 1956  (b) Bihar, 1966  (c) Gujarat, 1966  (d) Mumbai, 1956

64 National markets are found for ____________.
   (a) Perishable goods  (b) Food grain  (c) Durable goods  (d) Pulse crops

65 The Fruit product Order (1956) lays down mandatory standards for ____________.
   (a) Fresh fruits  (b) canned fruits  (c) processed fruits  (d) none

66 Procurement price is greater than ____________.
   (a) Floor price  (b) Market price  (c) Both a & b  (d) Issue price

67 _______ is the first function performed in the marketing of agricultural commodities.
   (a) Grading  (b) Transportation  (c) Financing  (d) Packing

68 Short period markets are found for ____________.
   (a) Perishable goods  (b) Food grain  (c) Durable goods  (d) Pulse crops

69 _______ refers to the difference between the prices prevailing at successive stages of marketing
   at a given point of time.
   (a) Lagged margin  (b) Concurrent margin  (c) Allocative margin  (d) None

70 Agricultural Price Commission was established in the year ____________.
   (a) 1965  (b) 1945  (c) 1955  (d) 1975

71 The World Standards Day is celebrated on ____________.
   a. 25 February  b. 14 October  c. 1 December  d. 17 January

72 International Organization for Standardization (ISO) was established on ____________.
   (a) 1947  (b) 1937  (c) 1957  (d) 1946

73 For which of the following crops, MSP is given statutory status?
   (a) Paddy  (b) Cotton  (c) Sugar cane  (d) Sunflower

74 _______ is price at which the commodity is made available to consumer at fair price shops.
   (a) Issue price  (b) Market price  (c) Both a & b  (d) Floor price

75 _______ is/are the primary marketing function(s).
   (a) Assembling  (b) Processing  (c) Dispersion  (d) All

76 WTO came into existence from ____________.
   (a) April, 1995  (b) March, 1995  (c) January, 1995  (d) February, 1995

77 Central Agmark Laboratory located at ____________.
   (a) New Delhi  (b) Mumbai  (c) Pune  (d) Nagpur

78 Present chairman of FCI is ____________.
   (a) Yogendra Tripathi  (b) Radha Mohan Singh  (c) Arun Jaitley  (d) Sushma Swaraj

79 DMI was established in the year ____________.
   (a) 1925  (b) 1945  (c) 1935  (d) 1955

80 Regulated market committee consist _______ members.
   (a) 17  (b) 15  (c) 27  (d) 8

*******
### Agriculture Universities of Gujarat

Anand Agril. University, Anand  
Navsari Agril. University, Navsari  
Junagadh Agril. University, Junagadh  
S. D. Agril. University, S. K. Nagar

**PART- A: Objective**

**Course No.: Hort. 3.2  
Title of course: Production technology of vegetables and flowers (2+1)**

**Date: 18/12/15  
Day: Friday  
Time: 9.30 to 10.15  
Marks: 40**

**Note:** Overwriting will not be considered.

#### Q.1. Write the appropriate choice in bracket

<table>
<thead>
<tr>
<th>Q.</th>
<th>Question</th>
<th>Options</th>
<th>Answer</th>
</tr>
</thead>
</table>
| 1  | Brussels sprout and broccoli are comes under crops.                     | (A) Root  
    (B) Cole  
    (C) Fruit  
    (D) Leafy | (D) Leafy |
| 2  | Which one is dicot vegetable among following?                           | (A) Onion  
    (B) Garlic  
    (C) Carrot  
    (D) Asparagus | (D) Asparagus |
| 3  | Which state ranks first in vegetables production in India?              | (A) Gujarat  
    (B) Maharashtra  
    (C) West Bengal  
    (D) Bihar | (C) West Bengal |
| 4  | Which crop contains “Sinigrin” glucoside?                                | (A) Onion  
    (B) Okra  
    (C) Bitter gourd  
    (D) Cabbage | (A) Onion |
| 5  | Which compound is responsible for bitterness in brinjal?                | (A) Glycogen  
    (B) Carotenoid  
    (C) Glycoalkaloids  
    (D) Phenols | (D) Phenols |
| 6  | Which vegetables among following is rich source of iodine?              | (A) Okra  
    (B) Brinjal  
    (C) Chilli  
    (D) Tomato | (A) Okra |
| 7  | Series of arches in garden is called as                                 | (A) Pergola  
    (B) Arbour  
    (C) Baradari  
    (D) Shrubbery | (C) Baradari |
| 8  | Among following, which variety of potato is most suitable for processing? | (A) Kufri Chinsana  
    (B) Kufri Jyoti  
    (C) Kufri Jawahar  
    (D) Kufri Sinduri | (D) Kufri Sinduri |
| 9  | Which is known as “heart of garden”?                                     | (A) Lawn  
    (B) Hedge  
    (C) Shrub  
    (D) Focal point | (D) Focal point |
| 10 | Tuberose is propagated by                                                | (A) Bulb  
    (B) Corm  
    (C) Tuber  
    (D) Sucker | (C) Tuber |
| 11 | The recommended dose of NPK kg/ha for watermelon is                     | (A) 150:50:50  
    (B) 150:100:50  
    (C) 150:150:50 | (C) 150:150:50 |
| 12 | The seed rate of spinach is                                              | (A) 65-70 kg/ha  
    (B) 25-30 kg/ha  
    (C) 5-10 kg/ha  
    (D) 45-50 kg/ha | (C) 5-10 kg/ha |
| 13 | Which one is leguminous leafy vegetable among following?                | (A) Amaranthus  
    (B) Palak  
    (C) Fenugreek  
    (D) Coriander | (B) Palak |
| 14 | For balanced diet, how much vegetables should be consumed daily by an adult? | (A) 100 gram  
    (B) 200 gram  
    (C) 300 gram  
    (D) 300 kg | (D) 300 kg |
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. Pusa Himani is a popular variety of</td>
<td>(A) Radish</td>
<td>(D) Knol khol</td>
</tr>
<tr>
<td>16. Which one is the most suitable plant for hedge making?</td>
<td>(A) Duranta</td>
<td>(D) Marigold</td>
</tr>
<tr>
<td>17. Turnip belongs to</td>
<td></td>
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<tr>
<td>18. The seed rate of potato is</td>
<td>(A) 3000 kg/ha</td>
<td>(D) 1000 kg/ha</td>
</tr>
<tr>
<td>19. Identify early variety of potato from following.</td>
<td>(A) Kufri Jyoti</td>
<td>(D) None</td>
</tr>
<tr>
<td>20. The seed rate for cabbage is</td>
<td>(A) 500 gram</td>
<td>(D) 1500 gram</td>
</tr>
<tr>
<td>21. Pusa Jwala is a variety of</td>
<td>(A) Chilli</td>
<td>(D) None</td>
</tr>
<tr>
<td>22. Sweet potato belongs to</td>
<td>(A) Convolvulaceae</td>
<td>(D) Malvaceae</td>
</tr>
<tr>
<td>23. Which one is not dioecious vegetables among following?</td>
<td>(A) Pointed gourd</td>
<td>(D) Bottle gourd</td>
</tr>
<tr>
<td>24. The botanical name of ridge gourd is</td>
<td>(A) L. acutangula</td>
<td>(D) None</td>
</tr>
<tr>
<td>25. Which one is perennial vegetable among following?</td>
<td>(A) Pointed gourd</td>
<td>(D) Ridge gourd</td>
</tr>
<tr>
<td>26. Moringa oleifera is a botanical name of</td>
<td>(A) Curry leaf</td>
<td>(D) None</td>
</tr>
<tr>
<td>27. The example of informal garden is</td>
<td>(A) Mughal</td>
<td>(D) French</td>
</tr>
<tr>
<td>28. Public parks are considered as</td>
<td>(A) Heart</td>
<td>(D) Brain</td>
</tr>
<tr>
<td>29. The edible part of cauliflower is called as</td>
<td>(A) Head</td>
<td>(D) Petiole</td>
</tr>
<tr>
<td>30. Art of giving ornamental shape to the plant is called as</td>
<td>(A) Shrubbery</td>
<td>(D) Arbour</td>
</tr>
<tr>
<td>31. The Yellow Vein Mosaic is a famous disease of</td>
<td>(A) Potato</td>
<td>(D) Brinjal</td>
</tr>
<tr>
<td>32. Tapioca comes under</td>
<td>(A) Tuber</td>
<td>(D) None</td>
</tr>
<tr>
<td>33. Which vegetable is mostly used in processing purpose among following?</td>
<td>(A) Brinjal</td>
<td>(D) Tomato</td>
</tr>
<tr>
<td>34. Night blindness disorder causes due to deficiency of vitamin in human.</td>
<td>(A) B</td>
<td>(D) D</td>
</tr>
<tr>
<td>35. The father of Indian roses is</td>
<td>(A) Dr. B.P.Pal</td>
<td>(D) Dr. Randhawa</td>
</tr>
<tr>
<td>36. Pusa Navbharat is a famous variety of</td>
<td>(A) Cluster bean</td>
<td>(D) Pea</td>
</tr>
<tr>
<td>37. Arka Kusumkari is a famous variety of</td>
<td>(A) Tomato</td>
<td>(D) Okra</td>
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<tr>
<td>38</td>
<td>Identify garden adornment from following.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A) Lawn (B) Shrub (C) Fence (D) Statues</td>
<td></td>
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<tr>
<td>39</td>
<td>Hybrid tea rose is commercially propagated by</td>
<td></td>
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<tr>
<td></td>
<td>(A) T-budding (B) Cutting (C) Layering (D) Grafting</td>
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<tr>
<td>40</td>
<td>Ponds, streams and islands are the basic features of</td>
<td></td>
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<td></td>
<td>(A) Japanese (B) English (C) Mughal (D) Italian</td>
<td></td>
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<tr>
<td>41</td>
<td>The red colour in tomato is due to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A) Quercetin (B) Carotenoid (C) Lycopene (D) Glycoside</td>
<td></td>
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<tr>
<td>42</td>
<td>Among following, which vegetable is highly tolerant to salinity?</td>
<td></td>
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<td></td>
<td>(A) Bitter gourd (B) Tomato (C) Cucumber (D) None</td>
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<tr>
<td>43</td>
<td>Galactomannan gum is extracted from crop.</td>
<td></td>
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<tr>
<td></td>
<td>(A) Cow pea (B) Cluster bean (C) Tapioca (D) Peas</td>
<td></td>
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<tr>
<td>44</td>
<td>Identify the marigold variety among following.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A) Pusa Naranagi (B) Pusa Red (C) Pusa yellow (D) Pusa green</td>
<td></td>
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<tr>
<td>45</td>
<td>Gladiator is a famous variety of crop.</td>
<td></td>
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<tr>
<td></td>
<td>(A) Jasmine (B) Rose (C) Gerbera (D) Marigold</td>
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<tr>
<td>46</td>
<td>The concept of wild garden is given by</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A) W. Robinson (B) W. Peterson (C) W. Enderson (D) B. P. Pal</td>
<td></td>
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<tr>
<td>47</td>
<td>Which flower crop belongs to iridaceae family?</td>
<td></td>
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<tr>
<td></td>
<td>(A) Gladiolus (B) Gerbera (C) Tuberose (D) Marigold</td>
<td></td>
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<tr>
<td>48</td>
<td>Among following, which flower crop is preferred for protected cultivation?</td>
<td></td>
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<tr>
<td></td>
<td>(A) Marigold (B) Gerbera (C) Tuberose (D) Gladiolus</td>
<td></td>
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<tr>
<td>49</td>
<td>Birbal Sahani is a famous variety of</td>
<td></td>
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<tr>
<td></td>
<td>(A) Chrysanthemum (B) Rose (C) Gerbera (D) Tuberose</td>
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<tr>
<td>50</td>
<td>Sayaji Park is a popular garden in state.</td>
<td></td>
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<tr>
<td></td>
<td>(A) Gujarat (B) Rajasthan (C) New Delhi (D) Punjab</td>
<td></td>
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<tr>
<td>51</td>
<td>Pinching and disbudding operation is necessary in crop.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A) Chrysanthemum (B) Tuberose (C) Gerbera (D) Jasmine</td>
<td></td>
</tr>
<tr>
<td>52</td>
<td>Floating gardens are found in state.</td>
<td></td>
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<td></td>
<td>(A) Punjab (B) J&amp;K (C) Gujarat (D) HP</td>
<td></td>
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<tr>
<td>53</td>
<td>Identify Asian variety of carrot among following.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A) Chantaney (B) Nantes (C) Pusa Kesar (D) Danvers</td>
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</tr>
<tr>
<td>54</td>
<td>All legume vegetables are self pollinated due to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A) Protogyne (B) Protandry (C) Cleistogamy (D) None</td>
<td></td>
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<tr>
<td>55</td>
<td>Removal of growing tip of plant is called as</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A) Defoliation (B) Pinching (C) Disbudding (D) Deshooting</td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>The pungency in chilli is due to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A) Allicin (B) Capsaicin (C) Capsanthin (D) Sinigrin</td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>Rose is generally pruned in the month of in Gujarat.</td>
<td></td>
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<tr>
<td></td>
<td>(A) January (B) February (C) October (D) June</td>
<td></td>
</tr>
<tr>
<td>58</td>
<td>Blanching is practiced in crop.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A) Carrot (B) Radish (C) Cauliflower (D) Potato</td>
<td></td>
</tr>
<tr>
<td>59</td>
<td>In which crop from following, curing is necessary?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A) Onion (B) Tomato (C) Okra (D) Brinjal</td>
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<tr>
<td>60</td>
<td>Fruit cracking in tomato is due to deficiency</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A) Ca (B) B (C) Mg (D) Mn</td>
<td></td>
</tr>
</tbody>
</table>
61 Which country stands first in vegetable production?
(A) India (B) Japan (C) America (D) China

62 Identify the indoor garden from following.
A Public garden B Window garden C Rock garden D Pond garden

63 Quercetin is responsible for in onion.
(A) Yellow colour (B) Pungency (C) Antifungal (D) Flavour

64 Tagetes erecta is a botanical name of
(A) African marigold (B) French marigold (C) Tuberose (D) Gladiolus

65 Arkal is a popular variety of
(A) Cow pea (B) Pea (C) Cluster bean (D) French bean

66 White brinjal is good remedies for patient.
(A) Cancer (B) Diabetes (C) Heart (D) None

67 Which flower crop is commonly grown for flower? 
(A) Jasmine (B) Gerbera (C) Gladiolus (D) None

68 Allium sativum is a botanical name of
(A) Onion (B) Tomato (C) Potato (D) Garlic

69 In which vegetable garden, the prices of land and labour are high?
(A) Kitchen garden (B) Truck garden (C) Market garden (D) None

70 Commercial propagation method of Pointed gourd is
(A) Seed (B) Vine cutting (C) Grafting (D) Budding

71 Cavity spot is physiological disorder of crop.
(A) Radish (B) Carrot (C) Beet root (D) Tomato

72 Which alkaloid is present in radish among following?
A Cucubitanin B Isothiocyanates C Sapogenin D Carotene

73 Which state has largest production of brinjal in India?
(A) West Bengal (B) Gujarat (C) Bihar (D) UP

74 The blossom end rot of tomato is due to deficiency.
(A) Ca (B) N (C) B (D) Mn

75 Lettuce is considered as crops.
(A) Tuber (B) Salad (C) Root (D) Fruit

76 Sugar Baby is the famous variety of crop.
(A) Watermelon (B) Musk melon (C) Tomato (D) Pumpkin

77 ABG-1 is a popular variety of
(A) Cucumber (B) Bottle gourd (C) Bitter gourd (D) None

78 Pusa Meghdoot is the popular variety of
(A) Ridge gourd (B) Bitter gourd (C) Bottle gourd (D) Pointed gourd

79 Which vegetables are rich in Vitamin C among following?
(A) Green chilli (B) Potato (C) Brinjal (D) Cowpea

80 Giant snowball is a popular variety of
(A) Cabbage (B) Cauliflower (C) Knol khol (D) None

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Page 4 of 4
Agricultural Universities of Gujarat

1. Anand Agricultural University, Anand
2. Junagadh Agricultural University, Junagadh
3. Navsari Agricultural University, Navsari
4. S.D. Agricultural University, S.K. Nagar

Third Semester End Examination (Reg.) of B.Sc.(Hons.) Agri. Degree—December, 2015

Course No.: Pl. Path.: 3.2
Date: 17-12-2015
Title of Course: Principles of Plant Pathology
Time: 9.30 to 10.15 Hrs.
Day: Thursday
Marks: 40

PART – A (Objective)

Q.1 Tick mark (✓) most appropriate option from the following:

1. The book entitled “Introduction to Principles of Plant Pathology” is written by
   (A) R.S. Singh
   (B) S.R. Singh
   (C) J.G. Manners
   (D) G.N. Agrios

2. Establishment of pathogen within a host plant is known as
   (A) Transmission
   (B) Penetration
   (C) Inoculation
   (D) Infection

3. Aflatoxin is produced by
   (A) Aspergillus flavus
   (B) Aspergillus niger
   (C) Both (A) and (B)
   (D) Rhizopus stolonifer

4. Carbendazim is traded as
   (A) Blue Copper
   (B) Tilt
   (C) Bavistin
   (D) Kavach

5. The presence of a pathogen or its parts/products seen on a host plant is termed as
   (A) Syndrome
   (B) Sign
   (C) Symptom
   (D) Virulence

6. Primary inoculum
   (A) Initiate the disease
   (B) Spread the disease
   (C) Both (A) & (B)
   (D) None of these

7. The wild host belong to the same family of the main host is known as
   (A) Collateral host
   (B) Alternate host
   (C) Both (A) & (B)
   (D) None of these

8. Trichoderma viride is a
   (A) Bio-control agent
   (B) Bactericide
   (C) Herbicide
   (D) Fungicide

9. Alternaria solani produce
   (A) Alternaric acid
   (B) Fusaric acid
   (C) Lycomarasmin
   (D) Piricularin

10. The minimum quantum of infectious propagules of a pathogen to cause disease
    is termed as
    (A) Inoculum potential
    (B) Penetration
    (C) Isolation potential
    (D) Inoculation
11. Wettable sulphur is generally used for management of _______ disease.
   (A) Rust          (B) Downy mildew
   (C) Smut          (D) Powdery mildew

12. The harmful physiological changes due to biotic causes are known as _______.
   (A) Disease      (B) Disorder
   (C) Malfunctioning (D) None of these

13. Root knot disease is caused by _______.
   (A) Virus        (B) Bacteria
   (C) Nematode     (D) Fungi

14. The fungal organ developed for attachment to the host surface is termed as _______.
   (A) Appressorium  (B) Haustorium
   (C) Rhizomorph   (D) Rhizoid

15. HC-toxin is produced by _______ fungus.
    (A) Helminthosporium carbonum
    (B) Helminthosporium sacchari
    (C) Alternaria tenuis
    (D) Helminthosporium maydis

16. The decrease in cell size is known as _______.
    (A) Hypertrophy (B) Atrophy
    (C) Hypotrophy (D) All above

17. Plant resistance governed by few gene pairs is known as _______ resistance.
    (A) Monogenic  (B) Vertical
    (C) Oligogenic (D) Polygenic

18. The first plant parasitic nematode causing ear cockle disease of wheat was reported by _______.
    (A) T. Needham (B) P. M. A. Millardet
    (C) N. A. Cobb (D) B. B. Mundkur

19. Linseed rust is an example of _______.
    (A) Autococious rust (B) Hemicyclic rust
    (C) Heteroeocious rust (D) Demicyclic rust

20. Virus indexing is generally made by _______ process.
    (A) ELISA      (B) Meristem tip culture
    (C) PCR       (D) Protoplast culture

21. The overwintering or over summering pathogens cause primary infection is known as _______.
    (A) Secondary inoculum (B) Primary inoculum
    (C) Primary infection (D) Secondary infection

22. The Bordeaux mixture was first time used for management of downy mildew of grape by _______.
    (A) B. B. Mundkur (B) N. A. Cobb
    (C) P. M. A. Millardet (D) T. Needham

23. Metabolic product of one microbe which inhibit/kill another microbe is known as _______.
    (A) Antibiotic    (B) Toxin
    (C) Chemical      (D) Poison

24. Mycoparasitism is associated with _______.
    (A) Trichoderma    (B) Cercospora
    (C) Septoria       (D) Alternaria
53. The time interval between ________ and appearance of symptoms is called the incubation period.
   (A) Isolation  (B) Inoculation
   (C) Re-isolation  (D) Re-inoculation

54. Yellow ear rot (Tunda) disease of wheat is caused by ________.
   (A) Bacteria  (B) Fungi
   (C) Nematode  (D) Both (A) & (C)

55. Tylose formation is observed in ________ disease development.
   (A) Vascular wilt  (B) Root rot
   (C) Foot rot  (D) Leaf spot

56. Application of ________ reduces the club root of cabbage by increasing soil pH to 8.5.
   (A) Sulphur  (B) Nitrogen
   (C) Lime  (D) Potash

57. Khaira disease of paddy is caused due to deficiency of ________.
   (A) Zinc  (B) Iron
   (C) Boron  (D) Calcium

58. The science deals with the relationship between weather parameters and development of epiphytotics is known as ________.
   (A) Remote sensing  (B) Meteoropathology
   (C) Epidemiology  (D) None of these

59. The disease constantly present in moderate to severe form in a confined area is known as ________.
   (A) Epidemic  (B) Pandemic
   (C) Sporadic  (D) Endemic

60. Insects carry plant pathogens externally is known as ________.
   (A) Epizootic  (B) Endozootic
   (C) Epidemic  (D) Endemic

61. Tomato spotted wilt virus is transmitted by ________.
   (A) Thrips  (B) Jassid
   (C) White fly  (D) Aphid

62. Pathogens which makes an aggressive effort to penetrate into intact host cell is known as ________.
   (A) Passive invaders  (B) Active invaders
   (C) Both (A) & (B)  (D) None of these

63. Sterility mosaic of pigeon pea is transmitted by ________.
   (A) Mite  (B) Aphid
   (C) Jassid  (D) White fly

64. The book entitled “Fungi and Diseases in Plants” is written by ________.
   (A) E. J. Butler  (B) B. B. Mundkur
   (C) R. S. Singh  (D) Vander Plank

65. 0.1% is equivalent to ________ ppm.
   (A) 100  (B) 10
   (C) 1  (D) 1000

66. ________ are resting structures produced by fungi.
   (A) Sclerotia  (B) Chlamydospore
   (C) Oospore  (D) All of these
67. Starch is degraded by ____ enzyme.
   (A) Cellulase  (B) Cutinase  (C) Pectinase  (D) Amylase

68. The time interval between the inoculation and appearance of disease symptoms is known as ____.
   (A) Isolation period  (B) Incubation period  (C) Resting period  (D) Latent period

69. Orobanche is the ____ flowering plant parasite of tobacco.
   (A) Partial root  (B) Partial stem  (C) Complete stem  (D) Complete root

70. ____ is a new generation group of fungicides.
   (A) Copper  (B) Strobilurins  (C) Organomercurials  (D) Sulphur

71. Which of the following is a host specific toxin?
   (A) Tetoxin  (B) Tabtoxin  (C) Victorin  (D) All of these

72. Indole-3-Acetic Acid (IAA) is naturally occurring as ____.
   (A) Gibberellins  (B) Cytokininns  (C) Ethylene  (D) Auxins

73. Bacteria mostly enter the plant through ____.
   (A) Wounds  (B) Hydathodes  (C) Lenticels  (D) Root hairs

74. Upward movement of fungicide in plant system is known as ____.
   (A) Ambiphile  (B) Apoplastic  (C) Symplastic  (D) None of these

75. The term “Contagium Vivum Fluidum” was coined by ____.
   (A) Adolph Mayer  (B) Iwanowski  (C) Stanley  (D) Beijerinck

76. Red scale onion variety is resistant to onion smudge due to the presence of ____.
   (A) Chlorogenic acid  (B) Proteoctic acid  (C) Catechol  (D) Both (B) & (C)

77. Soil solarization is useful for the management of ____ diseases.
   (A) Seed borne  (B) Air borne  (C) Soil borne  (D) All of these

78. Application of ____ to soil brings the soil pH to 5.2 and reduces the incidence of common scab of potato.
   (A) Lime  (B) Sulphur  (C) Gypsum  (D) Copper

79. Which of the following is not a toxin?
   (A) Fusaric acid  (B) Piricularin  (C) Lycomarasmin  (D) Arabinase

80. ____ is the first link in infection chain/disease cycle.
   (A) Survival  (B) Dissemination  (C) Infection  (D) None of these
### AGRICULTURAL UNIVERSITIES OF GUJARAT

1. Anand Agricultural University, Anand  
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#### Third Semester End Examination of B.Sc. (Hons.) Agriculture (Regular) Dec-15

**PART-A: Objective**

<table>
<thead>
<tr>
<th>Course No. PBG 3.3</th>
<th>Title of course: Principles of Plant Breeding (2+1)</th>
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<tbody>
<tr>
<td>Date: 16.12.2015</td>
<td>Time: 9.30 to 10.15 hrs</td>
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<tr>
<td>Marks: 40.00</td>
<td>Marks obtained: /40</td>
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<thead>
<tr>
<th>Q.-I</th>
<th>Tick mark (✓) most appropriate option from the following (40.0)</th>
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<tbody>
<tr>
<td>1. Which of the following is an example of secondary introduction in wheat?</td>
<td></td>
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<tr>
<td>(a) Kalyansona</td>
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<td>(b) Sonara 64</td>
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<td>(c) Lerma Rajo</td>
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<td>(d) NP 308</td>
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<tr>
<td>2. Which of the following method is applicable to self and cross-pollinated crops?</td>
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<tr>
<td>(a) SSD method</td>
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<tr>
<td>(b) Hybrid development</td>
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<td>(c) Bulk method</td>
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<td>(d) Synthetic development</td>
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<td>3. Vilmorin developed the concept of</td>
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<td>(a) Pureline</td>
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<td>(b) Progeny test</td>
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<td>(c) Self incompatibility</td>
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<td>(d) Recurrent selection</td>
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<td>4. The geitonogamy condition is found in</td>
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<td>(a) Maize</td>
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<td>(b) Wheat</td>
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<td>(c) Pigeonpea</td>
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<td>(d) Papaya</td>
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<td>5. The quickest method of varietal development is</td>
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<tr>
<td>(a) Pedigree method</td>
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<tr>
<td>(b) Plant introduction</td>
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<td>(c) Mass selection</td>
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<td>(d) Bulk method</td>
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<td>6. Which method of plant breeding is not used for asexually propagated crops?</td>
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<tr>
<td>(a) Plant introduction</td>
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<td>(b) Clonal selection</td>
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<td>(c) Mutation breeding</td>
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<tr>
<td>(d) Pureline selection</td>
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<tr>
<td>7. Which among the following is an often cross-pollinated crop?</td>
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<tr>
<td>(a) Alfalfa</td>
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<td>(b) Groundnut</td>
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<td>(c) Pigeon pea</td>
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<td>(d) Rice</td>
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<td>8. In parthenogenesis, embryo directly developed from</td>
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<td>(a) Synergid cells</td>
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<td>(b) Egg cell</td>
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<td>(c) Antipodal cells</td>
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<td>(d) Nucellus cell</td>
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<td>9. The most commonly used gene pool is</td>
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<tr>
<td>(a) Primary</td>
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<td>(b) Secondary</td>
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<td>(c) Tertiary</td>
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<td>(d) Quarterly</td>
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</table>

[F.T.O]
10. Additive genetic variance is
   (a) Heritable and fixable (b) Non-heritable and fixable
   (c) Heritable and non-fixable (d) Non-heritable and non-fixable

11. The process of bringing wild species under human management is
   (a) Selection (b) Plant introduction
   (c) Domestication (d) Acclimatization

12. Heterosis can be fully exploited in the form of
   (a) Synthetic variety (b) Composite variety
   (c) Hybrid variety (d) Multiline variety

13. For seed yield per plant in castor, \( P_1 = 100 \text{ g}, P_2 = 120 \text{ g} \) and \( F_1 = 150 \text{ g} \). What is the
    per cent heterobeltiosis for this trait?
   (a) 25 % (b) 50 %
   (c) 75 % (d) -50 %

14. Breeding behavior of a plant can be determined through
   (a) Progeny test (b) Back cross
   (c) Mass selection (d) Pureline selection

15. A cross between an inbred and an open pollinated variety is
   (a) Three way cross (b) Double top cross
   (c) Top cross (d) Direct cross

16. The concept of center of origin was proposed by
   (a) N. I. Vavilov (b) C. Linneaeus
   (c) J. R. Harlen (d) J. B. Hutchinson

17. Which of the following is fully compatible mating in gametophytic
    self-incompatibility?
   (a) \( S_1S_2 \times S_1S_2 \) (b) \( S_1S_2 \times S_2S_4 \)
   (c) \( S_1S_3 \times S_3S_4 \) (d) \( S_1S_2 \times S_2S_3 \)

18. Which of the two lines are isogenic for male sterility system?
   (a) A and R line (b) B and R line
   (c) A and B line (d) None of these

19. Collection of germplasm from foreign country is called
   (a) Indigenous collection (b) Indian collection
   (c) Local collection (d) Exotic collection

20. The source of dwarfing gene in wheat is
   (a) Dee-geo-woo-gen (b) Tif-23A
   (c) Kafir (d) Norin-10

21. Reciprocal differences are found in case of
   (a) Heteromorphic system (b) Gametophytic system
   (c) Sporophytic system (d) None of these

22. Breeding scheme which provides maximum opportunity for breeders to utilize his
    skill and judgement is
   (a) Pedigree method (b) Mass selection
   (c) Bulk method (d) SSD method

23. Gradual loss of genetic variability in a crop species is known as
   (a) Genetic drift (b) Genetic erosion
   (c) Acclimatization (d) Genetic gain

[To page No. 3]
24. Pollen grain formation takes place by the process of
   (a) Micro-sporogenesis  (b) Mega-sporogenesis
   (c) Micro-gametogenesis  (d) Mega-gametogenesis

25. Minimum inbreeding depression observed in
   (a) Self-pollinated crops  (b) Cross-pollinated crops
   (c) Often cross-pollinated crops  (d) Vegetative propagated crops

26. The primitive cultivars selected and cultivated by farmers are
   (a) Modern cultivars  (b) Wild relatives
   (c) Obsolete cultivars  (d) Land races

27. A cross between *G. hirsutum* and *G. barbadense* is
   (a) Inter-varietal cross  (b) Inter-specific cross
   (c) Inter-generic cross  (d) Introgressive cross

28. Which method is useful to rectify specific defect of a well adapted variety?
   (a) SSD breeding  (b) Heterosis breeding
   (c) Backcross breeding  (d) Pedigree breeding

29. For grain yield per plant in maize, F1 and F2 generations have 200 g and 175 g
    yield respectively. Calculate the percentage of inbreeding depression for this trait.
   (a) 6.5 %  (b) 12.5 %
   (c) 14.2 %  (d) 28.4 %

30. The most commonly used agent for chromosome doubling is
   (a) EMS  (b) Colchicine
   (c) Ethidium bromide  (d) MMS

31. The term heterosis was first used by
   (a) Bruce (1908)  (b) Jones (1917)
   (c) Shull (1914)  (d) Hull (1945)

32. If 20 inbreds are crossed in all possible combinations, the total number of single
    crosses (excluding reciprocals) would be
   (a) 160  (b) 175
   (c) 190  (d) 380

33. Dominance hypothesis was first proposed by
   (a) Davenport (1908)  (b) Jones (1917)
   (c) Donald (1968)  (d) Hull (1945)

34. Monosomic condition is represented by
   (a) 2n-2  (b) 2n-1
   (c) 2n+1  (d) 2n+2

35. Combining ability is not measure in case of
   (a) Simple recurrent selection  (b) Recurrent selection for GCA
   (c) Recurrent selection for SCA  (d) Reciprocal recurrent selection

36. In case of immune reaction, the rate of reproduction (*r*) of the pathogen is
   (a) *r* = 1  (b) *r* = 0.5
   (c) *r* = 0  (d) 0 < *r* < 1

37. Yield prediction and reconstitution is possible in case of
   (a) Open pollinated variety  (b) Synthetic variety
   (c) Composite variety  (d) Pureline variety

---

[P.T.O]
38. Random mating population is also known as
   (a) Mendelian population (b) Panmictic population
   (c) Both (a) and (b) (d) Neither (a) nor (b)

39. Genetic constitution of clone is
   (a) Heterozygous & homogeneous (b) Homozygous & heterogeneous
   (c) Homozygous & homogeneous (d) Heterozygous & heterogeneous

40. *Raphanobrassica* is a combination of
   (a) Radish and Cauliflower (b) Radish and mustard
   (c) Radish and turnip (d) Radish and Cabbage

41. Which of the following is a method of handling segregating population?
   (a) Introduction (b) Mass selection
   (c) Pedigree breeding (d) Pureline selection

42. A cross between tetraploid (4n) and diploid (2n) is
   (a) Diploid (b) Triplet
   (c) Tetraploid (d) Hexaploid

43. The frequency of recessive genotype (aa) is 0.64. What is the frequency of heterozygote (Aa)?
   (a) 0.16 (b) 0.32
   (c) 0.48 (d) 0.64

44. The concept of plant ideotype was given by
   (a) Stadler (b) Peterson
   (c) Muller (d) Donald

45. The process by which individual plant or group of plant are sort out from mixed heterogeneous population is known as
   (a) Domestication (b) Selection
   (c) Germplasm (d) Hybridization

46. Male sterility and self incompatibility promotes
   (a) Self pollination (b) Cross-pollination
   (c) Both (a) and (b) (d) Neither (a) nor (b)

47. Gene for gene hypothesis was first proposed by
   (a) Vavilov (b) Flor
   (c) Plank (d) Shull

48. SSD method was first proposed by
   (a) Goulden (b) Nagaharu
   (c) Jenkins (d) Rimpu

49. Individual plant selection is done from *F₂* to *F₂* generation in case of
   (a) Mass selection (b) Bulk method
   (c) Pedigree method (d) SSD method

50. Quarantine measures should be taken up for
   (a) Diseases (b) Insects
   (c) Noxious weeds (d) All of these

51. Rust screening test for transfer of recessive gene is carried out in
   (a) *BC₁* and *BC₂* generations (b) *BC₁F₂* and *BC₂F₂* generations
   (c) *BC₂* and *BC₄* generations (d) *BC₂F₂* and *BC₄F₂* generations

[On page No. 5]
52. Potato is
   (a) Auto-triploid  (b) Allo-triploid
   (c) Auto-tetraploid (d) Allo-tetraploid

53. When two species unable to cross directly, a third species may be used as a
   (a) Guided species (b) Major species
   (c) Minor species   (d) Bridge species

54. The concept of general and specific combing ability was first proposed by
   (a) Sprague and Tatum (b) Kempthorne
   (c) Burton and DeVane (d) Russell

55. Conservation of germplasm away from its natural habitat is
   (a) In-situ conservation (b) Ex-situ conservation
   (c) Active conservation (d) Core conservation

56. Protogyny condition is observed in
   (a) Pearl millet (b) Barnyard millet
   (c) Kodo millet   (d) Little millet

57. The causes of heteromorphic self incompatibility system is due to
   (a) Morphological   (b) Physiological
   (c) Biochemical     (d) Transgenic

58. Head quarter of NBGCR is located at
   (a) Hyderabad  (b) New Delhi
   (c) Chennai     (d) Bangalore

59. The ratio of additive genetic variance to total variance is called as
   (a) Repeatability (b) Co-heritability
   (c) Narrow sense heritability (d) Broad sense heritability

60. The loss in vigour and productivity of clones with time is called
   (a) Clonal selection (b) Clonal reselection
   (c) Clonal degeneration (d) Clonal mutation

61. Synthetic variety can be produced and maintained in
   (a) Self-pollinated crops (b) Cross-pollinated crops
   (c) Vegetatively propagated crops (d) All of these

62. The genetic variation in pureline may arises due to
   (a) Mutation  (b) Natural crossing
   (c) Mechanical mixture (d) All of these

63. CMS system is used for hybrid seed production in
   (a) Okra  (b) Brinjal
   (c) Onion   (d) Tomato

64. In every generation of selfing homozygosity is increased by
   (a) 12.5 %  (b) 25 %
   (c) 50 %     (d) 75 %

65. Which breeding method takes longest time for development of new variety?
   (a) Back cross method  (b) Bulk method
   (c) SSD method       (d) Pedigree method

66. In CGMS, A line is used as
   (a) Male sterile line (b) Male fertile line
   (c) Maintainer line   (d) Restorer line
67. Which of the following is non-allelic gene interaction?
   (a) Additive  (b) Dominance  (c) Epistasis  (d) All of these

68. Pre-requisite for initiation of crop improvement is
   (a) Genetic variation  (b) Hybridization  (c) Mutation  (d) Male sterility

69. A trip for collection of germplasm for crop species is called as
   (a) Exploitation  (b) Exploration  (c) Conservation  (d) Extinction

70. In heterosis breeding, the value of P1 is 10 units and that of P2 is 12 units. Which is the correct case of heterobeltiosis?
   (a) 8 units  (b) 10 units  (c) 12 units  (d) 14 units

71. How many back crosses are required to transfer a simply inherited trait under conventional backcross breeding programme?
   (a) 1-2  (b) 5-6  (c) 9-10  (d) 14-15

72. An individual having more than two basic set of chromosomes
   (a) Haploid  (b) Aneuploid  (c) Monoploid  (d) Euploid

73. How many inbreds required for double cross hybrid?
   (a) One  (b) Two  (c) Three  (d) Four

74. For development of hybrid, emasculation is required in case of
   (a) Self incompatibility  (b) Pistillate line  (c) Male sterility  (d) Bisexual flower

75. Multiline is generally a mixture of
   (a) Hybrids  (b) Clones  (c) Isogenic lines  (d) Non-isogenic lines

76. Sum total of all the genes present in random mating population is called as
   (a) Gene pool  (b) Gene frequency  (c) Genotype frequency  (d) Genetic drift

77. The term 'Nobilization' is related with
   (a) Sorghum  (b) Soybean  (c) Sugar beet  (d) Sugarcane

78. Which of the following cross (P1 x P2) is called three-way cross
   (a) (P1 x P2) x P1  (b) (P1 x P2) x (P1 x P2)
   (c) (P1 x P2) x P2  (d) (P1 x P2) x P3

79. M. S. Swaminathan is famous for
   (a) Green revolution  (b) Hybrid development in rice  (c) Synthetic development in maize  (d) Bt-cotton

80. The most common and widely used form of gene bank is
   (a) DNA bank  (b) Shoot tip bank  (c) Seed bank  (d) RNA bank

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-6-
1. A book entitled "Modern weed management" is written by
   a. O. P. Gupta  
   b. V. S. Rao

2. The leaves of *Lantana camara* induce jaundice in animals due to ______
   a. Nitrates  
   b. Lantradene-A

3. ______ cause different type of dermal allergies in humans.
   a. Carrot grass  
   b. Johnson grass

4. ______ weed seed admix with mustard seed causes blindness to human being
   a. Vakumba  
   b. Mexican poppy

5. ______ roots are used for adding flavor to coffee powder.
   a. Chenopodium album  
   b. Amaranthus viridis

6. ______ is shallow rooted perennial weed
   a. Cynodon dactylon  
   b. Sorghum halepense

7. *Saccharum spontaneum* weed is used to donate a specific gene for ____ crop.
   a. Sugarcane  
   b. Sorghum

8. Weeds found in water are known as ______
   a. Garden land  
   b. Terrestrial

9. According to ontogeny nut sedge is classified as ______.
   a. Annual  
   b. Perennial

10. *Digera arvensis* is a ______ weeds
    a. Annual  
    b. Perennial

11. ______ weeds are also known as broad leaved weeds
    a. Sedge  
    b. Grassy
12. _________ weed is called *ephemerals*
   a) *Amaranthus viridis*  
   b) *Phyllanthus niruri*  
   c) *Digera arvensis*  
   d) *Chenopodium album* 

13. Which of the following is crop-bound weed?
   a) *Cuscuta Spp.*  
   b) *Phyllanthus niruri*  
   c) *Digera arvensis*  
   d) *Chenopodium album* 

14. *Phalaris minor* is a mimicry weed of _____ crop.
   a) Rice  
   b) Wheat  
   c) Sorghum  
   d) Maize 

15. _________ weeds produces enormous number of seeds
   a) Annual  
   b) Perennial  
   c) Biennial  
   d) All 

16. _________ weeds are usually parasitic weeds.
   a) Crop associated  
   b) Crop bound  
   c) Season bound  
   d) None 

17. Wild oat is a _________ weed.
   a) Crop associated  
   b) Crop bound  
   c) Season bound  
   d) None 

18. *Striga* is _________ weed
   a) Total root parasite  
   b) Semi root parasite  
   c) Total stem parasite  
   d) Semi stem parasite 

19. Anthropoophytes are _________
   a) Alien weeds  
   b) Obligate weeds  
   c) Satellite weeds  
   d) Facultative weeds 

20. A weed which have no origin of India is called as _________
    a) Alien weed  
    b) Obligate weed  
    c) Objectionable weed  
    d) Special problem weed 

21. Mexican poppy have _________ mechanism for dispersal
    a) Censer  
    b) Endozoochory  
    c) Simple  
    d) No 

22. The parasitic weed primarily of sorghum and pearl millet is _________
    a) *Striga* spp.  
    b) *Cuscuta* spp.  
    c) *Orobanche* spp.  
    d) *Loranthus* spp. 

23. Lucerne is the main host of _________ parasitic weed
    a) *Striga* spp.  
    b) *Cuscuta* spp.  
    c) *Orobanche* spp.  
    d) *Loranthus* spp. 

24. For endozoochory mechanism, _________ dispersal agent is responsible.
    a) Wind  
    b) Animal  
    c) Water  
    d) FYM 

25. _________ dormancy is observed due to deeper placement of seeds of weeds
    a) Innate  
    b) Induced  
    c) Enforced  
    d) None 

26. Complete removal of a weed from an area is known as _________
    a) Weed control  
    b) Weed management  
    c) Weed eradication  
    d) None 

27. One or two flushes of weeds are destroyed before planting of any crop is known as _________
    a) Crop rotation  
    b) Summer fallowing  
    c) Stale seed bed  
    d) Smother cropping
28. ____ crop is utilized as smoother crop to suppress the growth of weeds
   a  Cotton  c  Cumin
   b  Castor  d  Cow pea
29. ____ is used for controlling aquatic weeds in rice fields
   a  Drainage  c  Crop rotation
   b  Flooding  d  Summer fallowing
30. Cutting of a uniform growth of weeds from an entire area at ground level is
   a  Cutting  c  Mowing
   b  Chaining  d  Digging
31. In lawns and gardens, weeds can be effectively controlled by adopting ____ method.
   a  Cutting  c  Hand weeding
   b  Mowing  d  Digging
32. ____ method is used against aquatic weeds growing in shallow ditches.
   a  Mowing  c  Cutting
   b  Tillage  d  Dredging
33. In soil solarization method, ____ energy is used for desiccation of weeds
   a  Wind  c  Water
   b  Solar  d  Kinetic
34. The bio-agents released so far had successfully passed through ____ test
   a  Starvation  c  Biological
   b  Chemical  d  Physical
35. ____ , a moth, was found prominent in destroying flowers and seeds of Lantana.
   a  Crotalaria lanata  c  Agastache hygrophila
   b  Cactoblastis cactorum  d  Sameodes albiquattus
36. Chenopodium album is classified as
   a  Summer annual  c  Perennial
   b  Kharis annual  d  Winter annual
37. The mycoherbicide used to control strangle vine in citrus orchard is
   a  De-vine  c  Bipolaris
   b  Colombo  d  Trego
38. Winter weeds can be easily controlled by adopting ____ sowing method
   a  Post irrigation  c  Pre-sowing irrigation
   b  Irrigation immediately after sowing  d  None
39. A mycoherbicide contains fungal spores of Colletotrichum gloesporioides ssp. Aeschynomone is
   a  De-vine  c  Bipolaris
   b  Colombo  d  Trego
40. The bio-agent used to control Parthenium hysterophorus is ____
   a  Crotalaria lanata  c  Zygocargma spp.
   b  Sameodes albiquattus  d  Dactyltopus spp.
41. A herbicide that will kill some plant species when applied to a mixed plant population without causing serious injury to other species is known as ____ herbicide
   a  Non selective  c  Special
   b  Selective  d  None
42. Glyphosate is ____ herbicide
   a  Contact  c  Non-residual
   b  Selective  d  Soil active
43. _______is non selective herbicide
   a  Pendimethalin  c  2,4-D
   b  Atrazine    d  Paraquat

44. _______ herbicide kills plant without regard to plant species.
   a  Non selective  c  Special
   b  Selective    d  Narrow spectrum

45. _______ herbicides prove active on one or a very limited number of plant species.
   a  Broad spectrum  c  Translocated
   b  Narrow spectrum d  Soil active

46. _______is foliage active herbicide
   a  2,4-D     c  Isoproturon
   b  Metribuzin  d  Pendimethalin

47. Translocated herbicides are of particular importance in controlling the ______ ( ) weeds
   a  Perennial    c  Annual
   b  Biennial     d  Ephemeral

48. _______ is used as soil fumigant
   a  Atrazine    c  Methyl bromide
   b  2,4-D       d  Pendimethalin

49. Application of herbicides uniformly to standing crops with disregard to the location of the plants is known as ______ application
   a  Blanket      c  Spot application
   b  Directed spraying  d  Lay-by-application

50. _______ method is used for application of herbicide with irrigation
   a  Chemigation    c  Herbigation
   b  Fertigation    d  Fumigation

51. An application of herbicides to restricted area along a crop row is known as ______ ( )
   a  Band application  c  Spot application
   b  Broadcast application  d  Lay-by-application

52. An application of herbicides to small patches of weeds is known as ______ ( )
   a  Blanket  c  Spot application
   b  Directed spraying  d  Protected application

53. _______ constitutes mechanical pulling of weeds with their shallow roots and rhizomes covered in mud
   a  Mowing    c  Dredging
   b  Cutting    d  Chaining

54. An application of herbicide after the emergence of weeds and crop is known as ______ ( )
   a  Pre emergence  c  Pre plant treatment
   b  Post emergence  d  Lay-by-application

55. _______ enhances herbicide uptake by the plant and its translocation to the site of action
   a  Antidote    c  Adjuvants
   b  Safner      d  Buffer

56. _______ fertilizer is used to increase absorption of glyphosate in nutsedge
   a  SSP     c  CAN
   b  DAP     d  AS

57. Chemical allows wettable powders to mix with the water is called ______ ( )
   a  Foaming agent  c  Safner
   b  Antifoaming agent  d  Wetting agent
58. Toxicity of a herbicide formulation to the handler or to the treated surfaces can be checked by _______.
   a. Safeners  c. Buffers  
   b. Stickers  d. Spreaders
59. If selective herbicide may either injure crop plants or result in poor weed control called as _______.
   a. Reverse selectivity  c. Poor selectivity  
   b. Selectivity  d. No selectivity
60. In potato and sugarcane, selectivity can be obtained by using contact type of herbicide before crop emergence due to _______.
   a. Shoot growth difference  c. Root growth difference  
   b. Morphological difference  d. No difference
61. When in metabolic reaction of herbicides, the intermediate chemical structure prove more phytotoxic than the parent compound, the process is called _______.
   a. Conjugation  c. Translocation  
   b. Reverse Metabolism  d. Metabolism
62. When the total effect of combination is greater or more to the sum of the effects of the two components taken independently is called _______ response.
   a. Additive  c. Antagonistic  
   b. Synergistic  d. Multiple
63. When the total effect of combination is equal to the sum of the effects of the two components taken independently is called _______ response.
   a. Additive  c. Antagonistic  
   b. Synergistic  d. Multiple
64. In pearl millet crop, _______ herbicide is recommended as pre emergence for weed control.
   a. Pendimethalin  c. Atrazine  
   b. Metribuzine  d. Glyphosate
65. What is the normal recommended rate of pendimethalin? _______.
   a. 4 kg  c. 0.9 kg  
   b. 80 kg  d. 2 kg
66. _______ herbicide is recommended as early post emergence in potato _______.
   a. Atrazine  c. Metribuzin  
   b. Paraquat  d. Pendimethalin
67. _______ resistance occurs when a plant selected for resistance to a specific herbicide is also resistant to other herbicides within a similar chemical group is called

   a. Cross  c. Positive  
   b. Negative cross  d. Multiple
68. _______ resistance occurs when a plant is resistant to herbicide that are chemically unrelated and that have different modes of action

   a. Cross  c. Positive  
   b. Negative cross  d. Multiple
69. Safener is also known as _______.
   a. Absorbent  c. Antidotes  
   b. Adjuvants  d. Adsorbents
70. Study of weed taxonomy, genetics, establishment, growth and products called _______.
   a. Weed ecology  c. Agricultural ecotype  
   b. Weed biology  d. Weed ecosystem
71. Congress grass contain _____ toxic alkaloids
   a  Documarin    c  Parthenin
   b  Prussic acid d  Nitrate

72. Sethoxydim resistant crop is ________
   a  Corn    c  Sugarcane
   b  Soybean d  Cotton

73. Cheapest method to eliminate mature, unwanted vegetation from non crop land area is
   a  Chemical control    c  Mechanical control
   b  Biological control  d  Burning

74. The study of relation ship between communities of different weed species with their environment is called ________
   a  Weed association       c  Weed prevention
   b  Weed synecology        d  Weed biology

75. Pathogens cultured artificially and made available in sprayable formulation is known as ________
   a  Bio-fungicide          c  Bio-nematicide
   b  Bio-insecticide        d  Bio-herbicide

76. Application of herbicide after last cultivation in crop is called as ________
   a  Lay by application    c  Broadcast application
   b  Band application      d  Blanket application

77. ____ are chemicals added to a herbicide formulation to reduce drifts by increasing droplets size
   a  Thickeners            c  Stickers
   b  Spreaders             d  Fertilizers

78. Weeds grow primarily in wild communities, but often escape to cultivated fields are called as
   a  Noxious weeds         c  Facultative weeds
   b  Objectionable weeds   d  Obligate weeds

79. *Xanthium strumarium* (Gadar) is a ________ weed
   a  Crop land            c  Road side
   b  Aquatic weed         d  Forest weed

80. A chemical allows petroleum based herbicides to mix with water is called as
   a  Invert Emulsifier c  Thickener
   b  Emulsifier   d  Penetrants

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3. Junagadh Agricultural University, Junagadh
4. Sardarkrushinagar Dantiwada Agricultural University Sardarkrushinagar

Third Semester End Examination of B. Sc. (Hons.) Agri. Regular-2015-16
Ag. Econ. 3.2: Agricultural Marketing, Trade and Prices

Date: 22-12-2015
Day: Tuesday
Time: 10.15 to 12.00 hrs.
Marks: 40

| Q.1 (A) | Explain Problems of Agricultural Marketing of India in detail. (6.00) |
| Q.1 (B) | Explain factors affecting Marketable Surplus. (4.00) |

Q.2 Write Short notes / Explain (10.00)

1. Classification of market on the basis of time
2. FCI
3. WTO
4. Primary marketing functions

Q.3(A) Define / Explain (Any Seven) (7.00)

1. Marketing Channel
2. Agricultural Marketing
3. Contract Farming
4. Price Spread
5. Re-export Trade
6. Marketed Surplus
7. Specialized Market
8. Monopsony Market

Q.3 (B) Differentiate the following (3.00)

1. Domestic Trade and International Trade
2. Perfect Market and Monopolistic Market
3. Speculation and Hedging

Q.4 Do as Directed (Any Ten) (10.00)

1. Which are the causes of seasonal price variation?
2. Draw the diagram of marketing channel for food grain.
3. Write the methods of selling.
4. List out the acts related to agricultural marketing.
5. List out the advantages of packaging.
6. What do you mean by speculative middlemen?
7. Give the objectives of agricultural price policy.
8. Give the name of the book with author name of Ag. Econ.3.2.
9. List out the functions of ware houses.
10. Give the classification of trade.
11. List out the secondary marketing functions.

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2. Junagadh Agril. University, Junagadh
4. S.D. Agril. University, S.K. Nagar

Third Semester End Examination of B.Sc. (Hons.) Agriculture (Regular) Dec-2015
Part – B : Subjective

Course No.: Ag. Engg. 3.2
Title of Course: Farm Power & Machinery (1+1)

Date: 23-12-2015
Time: 10.15-12.00
Marks: 40

Q.1(a) Differentiate the following (Any Three)
- Diesel engine and petrol engine
- Sprayer and Duster
- Disc plough and disc harrow

(b) A 5 bottom 40 cm (spacing) MB plough has depth of cut is 10 cm, if the soil resistance is 0.5 kg/cm² and the speed is 5 km/hr. Find the draft and horsepower needed to pull the implement. (4.0)

Q.2(a) Answer the following questions in brief (Any Three)
(1) Explain the valve timing diagram of four stroke engine with the help of sketch.
(2) Explain differential system.
(3) Working of four stroke petrol engine with sketch.
(4) Explain the methods of sowing.

(b) A three cylinder 4 stroke engine has cylinder diameter of 20 cm, stroke to bore ratio is 1.4 and clearance volume 4800 cm³. The engine speeds is 500 rpm and mean effective pressure is 7.0 kg/ cm². Mechanical efficiency of engine is 85 %. Calculate the IHP, BHP, compression ratio and swept volume of the engine. (4.0)

Q.3(a) What is calibration? Explain complete procedure for calibrating a seed drill. (4.0)

OR

What are the different factors that influence the selection of a tractor (in details).

(b) Calculate the seed rate per ha of a 9 x 20 cm seed drill. The diameter of ground wheel is 80 cm and weight of seed collected in 50 revolutions is 450 grams. Also calculate the efficiency of the machine, if 15 % time lost in turning refilling etc. and speed of operation is 5 kmph. (6.0)

OR

An eleven time cultivator having time spacing 10 cm, working depth of 5 cm and speed is 5 km/hr. Turning loss is 10%. Soil resistance is 0.8 kg/cm². Width of each furrow is 5 cm. Calculate (1) Time to cover 1 Ha, (2) Maximum draft (3) Required power.

Q.4(a) Calculate the cost of operation (Rs/hr) for an 35 hp tractor with following specification.
(i) Cost of tractor in Rs. = 500000
(ii) Interest rate = 16 % per year
(iii) Life of the tractor = 12 years
(iv) Working hours per year = 1200 hours
(v) Insurance, tax and shelter = 3 % of the initial cost of tractor
(vi) Fuel consumption per hour = 6 litres.
(vii) Diesel cost = Rs. 60 per litre.
(viii) Oil consumption per hour = 0.10 litre.
(ix) Oil cost = Rs. 160/- per litre.
(x) Salary of driver = Rs.6000/-per month.
(xi) Maintenance charges = 7.5 % of the initial cost of tractor
(xii) Salvage value = 10 % of the initial cost of tractor

(b) What is tillage? Write the objectives of tillage. (4.0)
AGRICULTURAL UNIVERSITIES OF GUJARAT
ANAND/ NAVSARI/ JUNAGADH/ SARDAKRUSHINAGAR
Third Semester End Examination (Regular) B.Sc.(Hons.) Agri. Dec-2015/Jan-2016
Ag. Extn. 3.1: Dimensions of Agricultural Extension (1+1)

Date: 19.12.2015  Time: 10.15 to 12.00 hrs
Saturday  Marks: 40

PART-B (Subjective)

Q.1 (A) Define/ Explain the following terms (Any Ten) [5.00]
1. Education  2. Community
3. Programme  4. Evaluation
5. Goal  6. ATIC
7. Extension education  8. Rural development

Q.1 (B) What is Programme Planning? Explain the steps of programme planning. [5.00]

Q.2 (A) Give full form of the following (Any Ten) [5.00]
1. ICDS  2. DWCRA
3. AEO  4. NATP
5. SFDA  6. FIG
7. PMRY  8. SGSY
9. HYVP  10. NES
11. NWDP  12. TTC

Q.2 (B) Explain key features of Training and Visit System in details. [5.00]

Q.3 (A) Do as directed (Any Five) [5.00]
1. Enlist the characteristics of agricultural extension
2. Enumerate the objectives of rural development
3. Enlist the agricultural related problems in rural development
4. List out the principles of Broad Based Extension System
5. Draw the organizational setup of ATIC
6. List out the objectives of Krishi Vigyan Kendra
7. What are the limitations of Training and Visit System?

Q.3 (B) Enlist the principles of Extension Education and explain any three in detail. [5.00]

Q.4 Write short notes (Any Five) [10.00]
1. Types of Education
2. Importance of Programme Planning
3. Democratic Decentralization
4. Agricultural Technology Management Agency
5. Concepts of Extension Education
6. Importance of Rural Development
7. Sardar Smriti Kendra

*****
Q.1 (A) Give the scientific cultivation practices of onion or tomato in respect to following heads
(i) Soil and climate (ii) Varieties (iii) Nursery management
(iv) Seed rate & spacing (v) Manure & fertilizers (vi) Harvesting & Yield

(B) Give the scientific reasons/justify the following sentences (Any four)
(i) Regular and frequent picking is necessary in okra.
(ii) Cabbage and cauliflower are transplanted crops.
(iii) Earthing up is essential operation in potato.
(iv) Vegetables are called as protective food.
(v) Pinching is essential operation in chrysanthemum.

Q.2 (A) Define/explain the following (Any four)
(i) Bolting (ii) Kitchen garden (iii) Metaxenia
(iv) Vegetable forcing (v) Disbudding (vi) Baradari

(B) Differentiate the following terms (Any three)
(i) Hot season vegetable Vs. Cool season vegetable
(ii) Ridge gourd Vs. Sponge gourd
(iii) Formal garden Vs. Informal garden
(iv) Asiatic type carrot Vs. European type carrot

Q.3 (A) Write short note on following terms (Any two)
(i) Botanical classification of vegetable crops
(ii) Physiological disorders of cauliflower
(iii) Essential features (components) of garden

(B) Write in detail about scientific production technology of marigold

Q.4 Do as directed (Any ten)
(i) Enlist type of commercial vegetable gardens
(ii) Enlist perennial vegetables
(iii) Give the full form of CPRI and IIVR
(iv) Give the harvesting indices for watermelon
(v) Enlist species of jasmine
(vi) Give the seed rate and spacing of pea
(vii) Mention the recommended dose of chemical fertilizers for hybrid okra
(viii) Enlist any four varieties of chilli
(ix) Enlist group (types) of rose
(x) Give any two uses of curry leaf
(xi) Enlist types of brinjal flowers according to style length
(xii) Enlist garden adornments
AGRICULTURAL UNIVERSITIES OF GUJARAT

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Third Semester End Examination (Reg.) of B.Sc.(Hons.) Agri. Degree– December, 2015

Course No.: Pl. Path. 3.2
Title of Course: Principles of Plant Pathology
Date: 17-12-2015
Time: 10.15 to 12.00 Hrs.
Day: Thursday
Marks: 40

PART – B (Subjective)

Q.1 (A) Enlist the general principles of plant disease management and discuss the "Avoidance of pathogens" in detail. (5.0)

(B) Define dispersal of pathogen and discuss the "Autonomous dispersal of pathogens" in detail. (5.0)

Q.2 (A) Define/explain the following (ANY FIVE): (5.0)
1. Pathogenesis
2. Plant Pathology
3. Hypersensitivity
4. Facultative parasite
5. Epidemiology
6. Infection

(B) State the important contribution of the following scientists in the field of plant pathology (ANY FIVE): (5.0)
1. Robert Koch
2. W. M. Stanley
3. Anton De Barry
4. M. J. Thirumalachar
5. Adolph Mayer
6. T. Needham

Q.3 Write short notes on the following (ANY FIVE): (10.0)
1. Disease pyramid
2. Plant quarantine
3. Survival of plant pathogens
4. Mechanisms of biological control
5. Role of growth regulators in pathogenesis
6. Stages in development of disease cycle

Q.4 Differentiate the following (ANY FIVE): (10.0)
1. Horizontal resistance v/s Vertical resistance
2. Host specific toxin v/s Non-host specific toxin
3. Systemic fungicide v/s Non-systemic fungicide
4. Alternate host v/s Collateral host
5. Simple interest disease v/s Compound interest disease
6. Soil invaders v/s Soil inhabitants

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Q.1 (A) Define /explain the followings (Any five) (5.0)
1. Bio herbicide
2. Soil solarization
3. Mimicry
4. Biological control of weed
5. Allelopathy
6. Objectionable weed

(B) What is weed? Discuss the losses caused by weeds in agriculture field only. (5.0)

Q.2 (A) Write short note on the followings (Any three) (6.0)
1. Crop weed association
2. Benefits of herbicides
3. Adjuvants
4. Criteria of successful bio agent

(B) Give herbicidal recommendation along with their time and rate of application. (4.0)
(i) Groundnut
(ii) Cumin
(iii) Sugarcane
(iv) Pearl millet

Q.3 (A) Differentiate the followings (Any four) (6.0)
(1) Dicot weed Vs Monocot weed
(2) Selective Vs Non selective herbicide
(3) Pre emergence Vs Post emergence application of herbicide
(4) Soil active Vs Foliage active herbicide
(5) Annual Vs Perennial weeds

(B) Give control measures of nut sedge and carrot grass (4.0)

Q.4 Answer as directed (Any five) (10.0)
(1) How the shoot growth differences of plant play role in achieving herbicide selectivity?
(2) Narrate the different crop husbandry methods of weed control.
(3) Give the classification of weed according to ontogeny of weeds.
(4) Enlist the factors for persistency of weeds.
(5) Give agents responsible for weed dispersal.
(6) Write in brief about crop weed competition.
AGRICULTURAL UNIVERSITIES OF GUJARAT
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THIRD Semester End Exam. of B.Sc. (Hons.) Agriculture (Regular) December-2015

PART-B: Subjective

Course No.: PBG 3.3
Date: 16.12.2015
Course Title: Principles of Plant Breeding (2+1)
Time: 10.15 to 12.00 hrs
Wednesday
Marks: 40.00

Q-1(A) Define/explain the following (ANY TEN)
1. Clastogamy
2. Germplasm
3. Clone
4. Self incompatibility
5. Heritability
6. Plant breeding
7. Acclimatization
8. Recurrent parent
9. Wide hybridization
10. multiline variety
11. Ideotype breeding
12. G x E interaction

Q-1(B) Discuss pedigree method of breeding for handling segregating population with suitable diagram, merits and demerits. (5.0)

Q-2(A) Differentiate the following (ANY FIVE)
1. Natural selection vs artificial selection
2. Vertical resistance vs horizontal resistance
3. General combining ability vs specific combining ability
4. Aneuploidy vs euploidy
5. Gametophytic vs sporophytic self-incompatibility
6. Synthetic variety vs composite variety
7. Pureline selection vs mass selection

Q-2(B) What is male sterility? Enlist types of male sterility in crop plants and explain any one with suitable diagrams. OR
What do you mean by recurrent selection? Enlist schemes of recurrent selection and explain any one in detail with schematic diagram. (5.0)

Q-3(A) Justify the following statements (ANY SIX)
1. Genetic emasculation is essential in hybrid seed production.
2. Maize is highly cross-pollinated crop.
3. Parents selected for hybridization must be diversified.
4. Extensive yield trials are not required in backcross breeding.
5. Farmers have to purchase fresh hybrid seeds every year.
6. Plant breeding is an art, science and technology.
7. Quarantine is necessary step in plant introduction.
8. Selection within a pureline is ineffective.

[PT.O.]
Q-3(B) Write short notes on the following (ANY TWO) (4.0)
1. Plant introduction
2. SSD method
3. Genetic basis of heterosis
4. Types of hybridization

Q-4 Do as directed (ANY TEN) (10.0)
1. What is IPR? Write different forms of IPR.
2. What are the characteristics of a clone?
3. State Hardy-Weinberg law along with its formula.
4. What are the basic requirements of backcross breeding?
5. Enlist four important achievements of plant breeding.
7. Enlist the mechanisms that promote autogamy.
8. Enlist the objectives of hybridization.
9. Narrate the various kinds of germplasm.
10. Write the ways to overcome self incompatibility in crop plants.
12. List out the barriers of distant hybridization.