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संच क्र.



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# सूचना

(1) सदर प्रश्नपुस्तिकेत 100 अनिवार्य प्रश्न आहेत. उमेदवारांनी प्रश्नांची उत्तरे लिहिण्यास सुरुवात करण्यापूर्वी या प्रश्नपुस्तिकेत सर्व प्रश्न आहेत किंवा नाहीत याची खात्री करून घ्यावी. तसेच अन्य काही दोष आढळल्यास ही प्रश्नपुस्तिका समवेक्षकांकडून लगेच बदलून घ्यावी.

(2) आपला परीक्षा-क्रमांक ह्या चौकोनांत **न विसरता बॉलपेनने** लिहावा.

- (3) वर छापलेला प्रश्नपुस्तिका क्रमांक तुमच्या उत्तरपत्रिकेवर विशिष्ट जागी उत्तरपत्रिकेवरील सूचनेप्रमाणे न विसरता नमूद करावा.
- (4) या प्रश्नपुस्तिकेतील प्रत्येक प्रश्नाला 4 पर्यायी उत्तरे सुचिवली असून त्यांना 1, 2, 3 आणि 4 असे क्रमांक दिलेले आहेत. त्या चार उत्तरांपैकी सर्वात योग्य उत्तराचा क्रमांक उत्तरपत्रिकेवरील सूचनेप्रमाणे तुमच्या उत्तरपत्रिकेवर नमूद करावा. अशा प्रकारे उत्तरपत्रिकेवर उत्तर-क्रमांक नमूद करताना तो संबंधित प्रश्न-क्रमांकासमोर छायांकित करून दर्शविला जाईल याची काळजी घ्यावी. ह्याकरिता फक्त काळ्या शाईचे बॉलपेन वापरावे, पेन्सिल वा शाईचे पेन वापरू नये.
- (5) सर्व प्रश्नांना समान गुण आहेत. यास्तव सर्व प्रश्नांची उत्तरे द्यावीत. घाईमुळे चुका होणार नाहीत याची दक्षता घेऊनच शक्य तितक्या वेगाने प्रश्न सोडवावेत. क्रमाने प्रश्न सोडविणे श्रेयस्कर आहे पण एखादा प्रश्न कठीण वाटल्यास त्यावर वेळ न घालिता पुढील प्रश्नांकडे वळावे. अशा प्रकारे शेवटच्या प्रश्नापर्यंत पोहोचल्यानंतर वेळ शिल्लक राहिल्यास कठीण म्हणून वगळलेल्या प्रश्नांकडे परतणे सोईस्कर ठरेल.
- (6) उत्तरपत्रिकेत एकदा नमूद केलेले उत्तर खोडता येणार नाही. नमूद केलेले उत्तर खोडून नव्याने उत्तर दिल्यास ते तपासले जाणार नाही. एकापेक्षा जास्त उत्तरे नमूद केल्यास ते उत्तर चुकीचे धरले जाईल व त्या चुकीच्या उत्तराचे गुण वजा केले जातील.
- (7) प्रस्तुत परीक्षेच्या उत्तरपत्रिकांचे मूल्यांकन करताना उमेदवाराच्या उत्तरपत्रिकेतील योग्य उत्तरांनाच गुण दिले जातील. तसेच "उमेदवाराने वस्तुनिष्ठ बहुपर्यायी स्वरूपाच्या प्रश्नांची दिलेल्या चार उत्तरांपैकी सर्वात योग्य उत्तरेच उत्तरपत्रिकेत नमूद करावीत. अन्यथा त्यांच्या उत्तरपत्रिकेत सोडविलेल्या प्रत्येक चुकीच्या उत्तरांसाठी 25% किंवा 1/4 गुण वजा/कमी करण्यात येतील".

## ताकीद

ह्या प्रश्नपत्रिकेसाठी आयोगाने विहित केलेली वेळ संपेपर्यंत ही प्रश्नपुस्तिका आयोगाची मालमत्ता असून ती परीक्षाकक्षात उमेदवाराला परीक्षेसाठी वापरण्यास देण्यात येत आहे. ही वेळ संपेपर्यंत सदर प्रश्नपुस्तिकेची प्रत/प्रती, किंवा सदर प्रश्नपुस्तिकेतील काही आशय कोणत्याही स्वरूपात प्रत्यक्ष वा अप्रत्यक्षपणे कोणत्याही व्यक्तीस पुरविणे, तसेच प्रसिद्ध करणे हा गुन्हा असून अशी कृती करणाऱ्या व्यक्तीवर शासनाने जारी केलेल्या "परीक्षांमध्ये होणाऱ्या गैरप्रकारांना प्रतिबंध करण्याबाबतचा अधिनियम-82" यातील तरतुदीनुसार तसेच प्रचलित कायद्याच्या तरतुदीनुसार कारवाई करण्यात येईल व दोषी व्यक्ती कमाल एक वर्षाच्या कारावासाच्या आणि/किंवा रुपये एक हजार रकमेच्या दंडाच्या शिक्षेस पात्र होईल.

तसेच ह्या प्रश्नपत्रिकेसाठी विहित केलेली वेळ संपण्याआधी ही प्रश्नपुस्तिका अनधिकृतपणे बाळगणे हा सुद्धा गुन्हा असून तसे करणारी व्यक्ती आयोगाच्या कर्मचारीवृंदापैकी, तसेच परीक्षेच्या पर्यवेक्षकीयवृंदापैकी असली तरीही अशा व्यक्तीविरुद्ध उक्त अधिनियमानुसार कारवाई करण्यात येईल व दोषी व्यक्ती शिक्षेस पात्र होईल.

पुढील सूचना प्रश्नपुस्तिकेच्या अंतिम पृष्ठावर पहा.

सूचनेविना हे सील उघडू नये

पर्यवेक्षकाच्या



# 5031

# कच्च्या कामासाठी जागा / SPACE FOR ROUGH WORK



- 1. Which one of the following is calculated by converting the yields of different intercrops into equivalent yield of any one crop based on price of the produce?
  - (1) Relative total yield
  - (2) Land equivalent ratio
  - (3) Crop equivalent yield
  - (4) Multiple cropping index

#### 2. The full form of APEDA is

- (1) Agricultural and Processed Food Products Export Development Authority
- (2) Agricultural and Processed Food Products Evaluation and Development Authority
- (3) Agricultural Production and Food Products Export Development Authority
- (4) Agricultural Processing, Evaluation and Distribution Authority

#### 3. Match the following:

Millet

**Botanical Name** 

- I. Finger millet
- a. Panicum sumatrense
- II. Little millet
- b. Setaria italica
- III. Foxtail millet
- c. Panicum miliaceum
- IV. Proso millet
- d. Eleusine coracana

#### **Answer options:**

I II III IV

- (1) a b c d
- (2) c d b a
- (3) d a b c
- (4) b a c d



- 4. The asexual method of propagation is divided into:
  - a. Stem cutting
  - b. Rooted slips
  - c. Seeds
  - d. Rhizomes

#### **Answer options:**

- (1) a only
- (2) a, b and c
- (3) a, b, c and d
- (4) a, b and d
- 5. The properties of atmosphere are:
  - a. It is not visible, but it is felt if in motion
  - b. It has no smell or taste or colour
  - c. It does not occupy space and has no mass
  - d. It exert pressure

#### **Answer options:**

- (1) a, b and c
- (2) a, b and d
- (3) b, c and d
- (4) a, b, c and d
- 6. The weather abnormalities which can affect crops adversely in India are:
  - a. Drought and floods
  - b. Heat and cold waves
  - c. Soil types
  - d. High winds

# Answer options :

- (1) a, b and c
- (2) a, b and d
- (3) a, b, c and d
- (4) b, c and d



- 7. The process of breaking, scratching, mechanically altering or softening the seed coats to make them permeable to water and gases is known as
  - (1) Acid treatment
  - (2) Scarification
  - (3) Leaching
  - (4) Hormonal treatment
- 8. The objective of integrated farming system is
  - (1) To achieve maximum replacement of off farm inputs
  - (2) To use maximum fertilizers and irrigation for higher production
  - (3) To concentrate only on single farm enterprise
  - (4) All of the above
- 9. Blind tillage refers to the tillage of the soil
  - (1) After seeding or planting the crop; either at pre-emergence stage of crop plants or while they are in early stages of growth
  - (2) Before seeding or planting the crop
  - (3) Simultaneously at seeding or planting the crop
  - (4) None of the above
- **10.** The sequence in which various crops are grown in a region or a locality in accordance with prevailing agro-climatic and socio-economic conditions is known as
  - (1) Cropping system
  - (2) Cropping pattern
  - (3) Farming system
  - (4) Sustainable agriculture



| 11. | Whi                             | Which one of the following facilitates an increased uptake of phosphorus?  |  |  |  |
|-----|---------------------------------|--|--|--|--|
|     | (1)                             | Azotobacter  |  |  |  |
|     | (2)                             | Blue green algae   |  |  |  |
|     | (3)                             | Mycorrhizae  |  |  |  |
|     | (4)                             | Actinomycetes  |  |  |  |
| 12. | Amo                             | ong the following, which crops is/are C <sub>4</sub> plants ?  |  |  |  |
|     | (1)                             | Sugarcane  |  |  |  |
|     | (2)                             | Sorghum  |  |  |  |
|     | (3)                             | Maize  |  |  |  |
|     | (4)                             | All of the above   |  |  |  |
|     |                                 |  |  |  |  |
| 13. | Acc                             | epted mode of action of herbicide is   |  |  |  |
| 13. | Acc (1)                         | epted mode of action of herbicide is  It inhibits the photosynthesis and respiration   |  |  |  |
| 13. |                                 |  |  |  |  |
| 13. | (1)                             | It inhibits the photosynthesis and respiration   |  |  |  |
| 13. | (1)<br>(2)                      | It inhibits the photosynthesis and respiration  It inhibits the biosynthesis and cell division process  There will be abnormal tissue development and inhibition of the germination  |  |  |  |
| 13. | (1)<br>(2)<br>(3)<br>(4)        | It inhibits the photosynthesis and respiration  It inhibits the biosynthesis and cell division process  There will be abnormal tissue development and inhibition of the germination process  |  |  |  |
|     | (1)<br>(2)<br>(3)<br>(4)        | It inhibits the photosynthesis and respiration  It inhibits the biosynthesis and cell division process  There will be abnormal tissue development and inhibition of the germination process  All of the above  |  |  |  |
|     | (1)<br>(2)<br>(3)<br>(4)        | It inhibits the photosynthesis and respiration  It inhibits the biosynthesis and cell division process  There will be abnormal tissue development and inhibition of the germination process  All of the above  genetic and physical purity along with the high standard of all other quality                                       |  |  |  |
|     | (1)<br>(2)<br>(3)<br>(4)<br>The | It inhibits the photosynthesis and respiration  It inhibits the biosynthesis and cell division process  There will be abnormal tissue development and inhibition of the germination process  All of the above  genetic and physical purity along with the high standard of all other quality ameters for basic or nucleus seed has |  |  |  |



| 15.   | Whi  | ch of the following is not found in cell | s of a | Il plants ?                         |
|-------|------|--|--------|-------------------------------------|
|       | (1)  | Rigid cell wall                          |        |                                     |
|       | (2)  | Central vacuole                          |        |                                     |
|       | (3)  | Plastids                                 |        |                                     |
|       | (4)  | Centrosomes                              |        |                                     |
| 16.   | The  | plant is called monoecious when          |        |                                     |
|       | (1)  | Male and female flowers on differen      | t plan | ts                                  |
|       | (2)  | Male and female parts in the same f      | lower  |                                     |
|       | (3)  | Male and female flowers are born or      | n sam  | ne plant                            |
|       | (4)  | Staminate                                |        |                                     |
| 17.   |      | •  |        | diverted to serve as precursors for |
|       | bios | synthetic pathways, the TCA cycle is o   | often  | called as                           |
|       | (1)  | Catabolic pathway                        |        |                                     |
|       | (2)  | Anabolic pathway                         |        |                                     |
|       | (3)  | Amphibolic pathway                       |        |                                     |
|       | (4)  | All of the above                         |        |                                     |
| 18.   | Dati | tura spp. contains which of the followi  | ng po  | otential commercial alkaloid ?      |
|       | (1)  | Tropane                                  | (2)    | Morphine                            |
|       | (3)  | Quinine                                  | (4)    | Caffeine                            |
| 19.   | The  | type of gene interaction called supple   | emen   | tary gene action gives the ratio of |
|       | (1)  | 9:3:3:1                                  | (2)    | 15:1                                |
|       | (3)  | 9:7                                      | (4)    | 9:3:4                               |
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| 20. | Which one of the following growth regulator compete and interfere with auxin activity? |  |        |   |  |
|-----|--|--|--------|---|--|
|     | (1)  | TIBA                                       | (2)    | 2, 4-D                                  |  |
|     | (3)  | Tryptophan                                 | (4)    | IPA                                     |  |
| 21. | Whi  | ch of the different pathway of photosyntl  | nesis  | plants have lower water use efficiency? |  |
|     | (1)  | C <sub>3</sub> plants                      | (2)    | C <sub>4</sub> plants                   |  |
|     | (3)  | CAM plants                                 | (4)    | All of the above                        |  |
| 22. | In m   | nitosis, the phase which requires shor     | test c | luration is                             |  |
|     | (1)  | Prophase                                   | (2)    | Metaphase                               |  |
|     | (3)  | Anaphase                                   | (4)    | Telophase                               |  |
| 23. | The  | dried blood meal contains                  | _      | % nitrogen.                             |  |
|     | (1)  | 10 to 12                                   |        |   |  |
|     | (2)  | 12 to 15                                   |        |   |  |
|     | (3)  | 4 to 10                                    |        |   |  |
|     | (4)  | 13   |        |   |  |
| 24. | Sulf   | ate of potash contains                     | % K    | ζ.                                      |  |
|     | (1)  | 42 to 44                                   | (2)    | 44 to 46                                |  |
|     | (3)  | 46 to 48                                   | (4)    | 60 and above                            |  |
| 25. | Cat  | ion exchange capacity of soil is           |        |   |  |
|     | (1)  | The sum total of the exchangeable of       | cation | s that a soil can adsorb                |  |
|     | (2)  | The sum total of the exchangeable of       | cation | s that a soil can absorb                |  |
|     | (3)  | The sum total of the non-exchangeat absorb | ole an | d exchangeable cations that a soil can  |  |
|     | (4)  | The sum total of exchangeable ions         | that a | a soil can absorb                       |  |



| 26.     | Which of the following micronutrient present in nitrogenase and nitrate reductase enzymes essential for nitrogen fixation and nitrogen assimilation? |   |       |   |
|---------|--|---|-------|---|
|         | (1)  | Zinc  | (2)   | Manganese                               |
|         | (3)  | Molybdenum  | (4)   | Boron                                   |
| 27.     |  | , ,   | of c  | calcium carbonate in some part of the   |
|         | prof   | ile is termed as                                    |       |   |
|         | (1)  | Podzolization                                       |       |   |
|         | (2)  | Carbonation   |       |   |
|         | (3)  | Calcification                                       |       |   |
|         | (4)  | Decalcification                                     |       |   |
| 28.     |  | ich of the following desirable characteri<br>sess ? | stics | s of an ideal green manure crop should  |
|         | а.   | It should be legume crop with good r                | odul  | lar habit                               |
|         | b.   | It should have little water requiremen              |       |   |
|         | c.   | It should have a deep root system a tissues         | ınd c | contain large quantities of non-fibrous |
|         | d.   | It should have a shallow root system                | and   | certain fibrous tissues                 |
|         | Ans  | swer options :                                      |       |   |
|         | (1)  | a, b and c only                                     |       |   |
|         | (2)  | a and b only  |       |   |
|         | (3)  | b, c and d only                                     |       |   |
|         | (4)  | a, c and d only                                     |       |   |
| 29.     |  | ontinuous application of sewage waste o             | over  | several years may result in enrichment  |
|         | (1)  | Essential nutrients                                 |       |   |
|         | (2)  | Heavy metals  |       |   |
|         | (3)  | Soil productivity                                   |       |   |
|         | (4)  | None of the above                                   |       |   |
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| ~~  | N 4 - 4 - 1- | 41  | £ - 11 |     |
|-----|--------------|-----|--------|-----|
| 30. | Match        | tna | TOLLON | una |
|     |              |     |        |     |

- a. Rhizobium
- Symbiotic association with trees and shrubs and fixes atmospheric N.
- b. Azotobacter
- II. Chemo-heterotrophic bacteria associated to live within roots of sorghum, pearl millet, rice
- c. Frankia
- III. Live in the root nodules of legumes through symbiotic relationship
- d. Azospirillum
- IV. Aerobic chemo-heterotrophic and free living bacteria

#### **Answer options:**

|     | а  | b  | С  | d  |
|-----|----|----|----|----|
| (1) | IV | Ш  | II | 1  |
| (2) | I  | II | Ш  | IV |
| (3) | Ш  | IV | 1  | П  |
| (4) | Ш  | IV | II | I  |

- 31. Soft curd milk is characterised by
  - (1) Low casein and calcium content
  - (2) Low casein and high calcium content
  - (3) High casein and calcium content
  - (4) High casein and low calcium content
- 32. Bull's seminal vesicles secretions are rich in
  - (1) Copper

(2) Fructose

(3) Mannose

(4) Gel

- **33.** Which is the best method of getting true strains from unknown stock by helping selection of desirable and calling of undesirable individuals?
  - (1) In breeding

(2) Out crossing

(3) Criss crossing

(4) Cross breeding



| 34.          |      | metabolisable energy (Mcal) required weighing 400 kg as per ICAR (2013) |         | per day for maintenance of a lactating dard is                                  |
|--------------|------|---|---------|---|
|              | (1)  | 10.52   | (2)     | 11.82   |
|              | (3)  | 14.32   | (4)     | 12.72   |
| 35.          | Whi  | ch milk is best for preparation of Chh                                  | ana ?   | ,   |
|              | (1)  | Cow milk  | (2)     | Buffalo milk  |
|              | (3)  | Goat milk   | (4)     | Camel milk  |
| 36.          | Whi  | ch of the following statements are co                                   | rrect a | about buffalo milk ?  |
|              | a.   | Buffalo milk fat has a higher saponif milk fat.                         | icatio  | n value and melting point than cow  |
|              | b.   | Cow milk fat is higher than buffalo m                                   | nilk fa | t in butyric and oleic acids.   |
|              | C.   | The particle size of buffalo miscellar                                  | case    | in is larger than that of cow micelle   |
|              | Ans  | swer options :  |         |   |
|              | (1)  | a and c are correct   |         |   |
|              | (2)  | b and c are correct   |         |   |
|              | (3)  | a and b are correct   |         |   |
|              | (4)  | All are incorrect   |         |   |
| 37.          |      | total market value of all final goods p                                 | rodu    | ced and services provided by a  |
|              | (1)  | Net National Product  |         |   |
|              | (2)  | Gross National Product  |         |   |
|              | (3)  | Gross Domestic Product  |         |   |
|              | (4)  | Net Domestic Product  |         |   |
| 38.          | indu | <u> </u>  |         | production, high investment in basic es, high profits, full employment, etc. is |
|              | (1)  | Incremental stage   | (2)     | Prosperity stage  |
|              | (3)  | Recovery stage  | (4)     | None of the above   |
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| 39. | Which of the following law explains, "As additional units of variable inputs are used in combination with one or more fixed inputs, the marginal physical product will eventually begin to decline"? |   |        |  |  |
|-----|--|---|--------|--|--|
|     | (1) Law of diminishing returns   |   |        |  |  |
|     | (2)  | Law of equimarginal returns               |        |  |  |
|     | (3)  | Law of marginal physical product          |        |  |  |
|     | (4)  | Law of increasing returns                 |        |  |  |
| 40. | Whi  | ch of the following loan is a self-liquid | ating  | loan ?                                 |  |
|     | (1)  | Long term loan                            | (2)    | Crop loan                              |  |
|     | (3)  | Medium term loan                          | (4)    | Chattel loan                           |  |
| 41. | Whi  | ch of the following is/are the aspects    | of foc | od problem in India ?                  |  |
|     | (1)  | Quantitative Aspects                      |        |  |  |
|     | (2)  | Qualitative Aspects                       |        |  |  |
|     | (3)  | High prices of food grains Vs. Purch      | asing  | power                                  |  |
|     | (4) All of these   |   |        |  |  |
| 42. | Why more farmers are going for crop insurance ?  |   |        |  |  |
|     | (1)  | Protection to farmers against failure     | of cre | ops                                    |  |
|     | (2)  | Provide confidence to adopt modern        | tech   | nology                                 |  |
|     | (3)  | It is difficult to inspect crops and dete | ermir  | ne damage                              |  |
|     | (4)  | Difficult to fix rate of premium for ind  | ividu  | al farmers                             |  |
| 43. | The  | process by which innovation is commi      | unica  | ted through certain channels over time |  |
|     | amo  | ong the members of a social system is     | calle  | ed as                                  |  |
|     | (1)  | Communication                             | (2)    | Diffusion                              |  |
|     | (3)  | Adoption                                  | (4)    | None of the above                      |  |



| 44. |      | is the basic unit of society.   |       |   |
|-----|------|---|-------|---|
|     | (1)  | Neighbourhood   | (2)   | Group   |
|     | (3)  | Family  | (4)   | Community   |
| 45. | of b | ampling in which each possible sampleing selected which also implies an each as |       | n' different units has an equal chance chance of selection into the sample is |
|     | (1)  | quasi-random sampling   | (2)   | simple random sampling  |
|     | (3)  | stratified random sampling  | (4)   | multistage random sampling  |
| 46. | Who  | o was the pioneer of 'Etawah Pilot Pro  | ject' | ?   |
|     | (1)  | S. K. Dey   | (2)   | Albert Mayer  |
|     | (3)  | F. L. Brayne  | (4)   | Dr. Spencer Hatch   |
| 47. |      | se who take more time for diffusion ar  | nd ad | option of idea or technology are  |
|     | (1)  | Innovators  | (2)   | Early majority  |
|     | (3)  | Laggards  | (4)   | Opinion leaders   |
| 48. |      | ongst the different communication met   | thods | , in which method "Study Tour" is   |
|     | (1)  | Group method  | (2)   | Mass method   |
|     | (3)  | Individual method   | (4)   | Virtual method  |
| 49. |      | en the sustained rise in prices is about 1 tion.                                | 0 per | cent per annum, it is called  |
|     | (1)  | Running   | (2)   | Hyper   |
|     | (3)  | Creeping  | (4)   | Walking   |
| 50. | The  | lowest level of injury where damage of  | an b  | e measured is called  |
|     | (1)  | ETL   | (2)   | EIL   |
|     | (3)  | Damage Boundary (DB)  | (4)   | Damage  |
|     |      |   |       |   |



| 51.        | Which of the following organisms causes grasserie disease in Bombyx mori? |   |   |  |  |
|------------|---|---|---|--|--|
|            | (1)   | Nosema bombyeis   |   | •  |  |
|            | (2)   | Beauveria bassiana  |   |  |  |
|            | (3)   | Bacillus bombysepticus  |   |  |  |
|            | (4)   | Nuclear polyhedrosis virus  |   |  |  |
| 52.        | Trich   | nogramma spp (Trichogrammatidae)  | paras   | itizes the   |  |
|            | (1)   | Larvae of bollworm  |   |  |  |
|            | (2)   | Pupa of bollworm  |   |  |  |
|            | (3)   | Eggs of the bollworm  |   |  |  |
|            | (4)   | Eggs and larvae of bollworm   |   |  |  |
| 53.        | Alle  | ochemical giving an adaptive advan  | tage to   | the receiving organism is known as   |  |
|            | (1)   | Allomones   | (2)   | Kairomones   |  |
|            | (3)   | Pheromone   | (4)   | None of these  |  |
|            |   |   |   |  |  |
| 54.        | At th   |   | gle is p  | present in general veination of wing in  |  |
| 54.        |   |   | gle is p  | oresent in general veination of wing in Apical                                   |  |
| 54.        | inse  | ct.   |   |  |  |
| 54.<br>55. | (1)<br>(3)  | ct.<br>Anal   | (2)   | Apical<br>Coastal  |  |
|            | (1)<br>(3)  | ct. Anal Humeral  | (2)   | Apical<br>Coastal  |  |
|            | (1)<br>(3)<br>Whi   | ct. Anal Humeral ch of the following trap crop helps in re  | (2)<br>(4)<br>educino                             | Apical Coastal g damage by Helicoverpa in cotton ?                               |  |
|            | (1)<br>(3)<br>Which<br>(1)<br>(3)   | ct. Anal Humeral ch of the following trap crop helps in re  | (2)<br>(4)<br>educing<br>(2)<br>(4)               | Apical Coastal g damage by Helicoverpa in cotton? Sorghum                        |  |
| 55.        | (1)<br>(3)<br>Which<br>(1)<br>(3)   | ct. Anal Humeral ch of the following trap crop helps in re Maize Sunflower                                      | (2)<br>(4)<br>educing<br>(2)<br>(4)               | Apical Coastal g damage by Helicoverpa in cotton? Sorghum Marigold               |  |
| 55.        | (1)<br>(3)<br>White<br>(1)<br>(3)   | ct. Anal Humeral ch of the following trap crop helps in re Maize Sunflower on Pink bollworm hibernates in       | (2)<br>(4)<br>educing<br>(2)<br>(4)               | Apical Coastal g damage by Helicoverpa in cotton? Sorghum Marigold stage.        |  |
| 55.        | (1)<br>(3)<br>Which<br>(1)<br>(3)<br>Cott<br>(1)<br>(3)                   | ct. Anal Humeral ch of the following trap crop helps in re Maize Sunflower on Pink bollworm hibernates in       | (2)<br>(4)<br>educing<br>(2)<br>(4)<br>(2)<br>(4) | Apical Coastal g damage by Helicoverpa in cotton? Sorghum Marigold stage. Larval |  |
| 55.<br>56. | (1)<br>(3)<br>Which<br>(1)<br>(3)<br>Cott<br>(1)<br>(3)                   | Anal Humeral ch of the following trap crop helps in re Maize Sunflower on Pink bollworm hibernates in Egg Pupal | (2)<br>(4)<br>educing<br>(2)<br>(4)<br>(2)<br>(4) | Apical Coastal g damage by Helicoverpa in cotton? Sorghum Marigold stage. Larval |  |



| 58. | On which plant disease epidemics the first computer simulation programme was prepared in 1969? |  |        |  |
|-----|--|--|--------|--|
|     | (1)  | Late leaf spot of groundnut                            |        |  |
|     | (2)  | Early blight of tomato and potato                      |        |  |
|     | (3)  | Late blight of tomato and potato                       |        |  |
|     | (4)  | Early leaf spot of groundnut                           |        |  |
| 59. | Whi  | ch rice disease is caused by Xanthom                   | nonas  | s campestris pv. oryzae ?                |
|     | (1)  | Blast  | (2)    | Sheath rot                               |
|     | (3)  | Bacterial leaf blight                                  | (4)    | Sheath blight                            |
| 60. |  | ch of the following nitrogen fixing bacte grass roots? | ria ha | ave associative relationship with cereal |
|     | (1)  | PSB  | (2)    | Rhizobium                                |
|     | (3)  | Azospirillum   | (4)    | KSB                                      |
| 61. | Sigr   | nificant contribution of disease cycle o               | f cere | eal rust in India was made by            |
|     | (1)  | Mundkur  | (2)    | Nagarajan                                |
|     | (3)  | Payak M. M.  | (4)    | Mehta K. C.                              |
| 62. | The  | sterility mosaic of pigeon pea is caus                 | ed by  | 1  |
|     | (1)  | Virus  |        |  |
|     | (2)  | Bacteria   |        |  |
|     | (3)  | Fungus   |        |  |
|     | (4)  | Nematodes  |        |  |
| 63. | Whi  | ch kind of nematode cause problems                     | in Gr  | am crop ?                                |
|     | (1)  | Root knot nematode                                     |        |  |
|     | (2)  | Spiral nematode  |        |  |
|     | (3)  | Ear-cockle nematode                                    |        |  |
|     | (4)  | Burrowing nematode                                     |        |  |
|     |  |  |        |  |



| 64. | Whi  | ich diseases generally interfere the tra                             | nslo    | cation of water in plants?           |
|-----|------|--|---------|--------------------------------------|
|     | (1)  | Leaf spots   | (2)     | Wilts                                |
|     | (3)  | Smuts  | (4)     | Rusts                                |
| 65. |      | line is in NW quadrant and its whole c                               | ircle   | bearing is 275°, its reduced bearing |
|     | will | be   |         |                                      |
|     | (1)  | 105  | (2)     | 95                                   |
|     | (3)  | 85   | (4)     | 75                                   |
| 66. | The  | major operations performed by mode                                   | ern ric | ce mills are                         |
|     | a.   | Cleaning   |         |                                      |
|     | b.   | Husking  |         |                                      |
|     | c.   | Separation   |         |                                      |
|     | d.   | Washing  |         |                                      |
|     | Ans  | swer options :   |         |                                      |
|     | (1)  | a and b only   |         |                                      |
|     | (2)  | a, b, c and d  |         |                                      |
|     | (3)  | a, b and d   |         |                                      |
|     | (4)  | a, b and c   |         |                                      |
| 67. |      | bin relative dimensions are n surface before it strikes the opposite |         | •                                    |
|     | (1)  | Shallow  | (2)     | Deep                                 |
|     | (3)  | Bukhari  | (4)     | Kothari                              |
| 68. |      | olume of water necessary to cover an timeter is equal to cubic       |         | -                                    |
|     | (1)  | 10   | (2)     | 100                                  |
|     | (3)  | 1000   | (4)     | 10000                                |
|     |      |  |         |                                      |
|     |      | •  |         |                                      |



- 69. The shape of Hydrograph is effected by
  - a. Non uniform aerial distribution of rainfall
  - b. Varying rainfall intensity
  - c. Shape of the basin
  - d. Direction of storm movement

#### **Answer options:**

- (1) a, b and d
- (2) a and b only
- (3) a, b and c
- (4) a, b, c and d
- 70. Hot gas efficiency in gasification process is
  - (1) Directly proportional to potential and sensible heat of gas
  - (2) Inversely proportional to potential and sensible heat of gas
  - (3) Directly proportional to heat available in solid fuel
  - (4) None of the above
- 71. \_\_\_\_\_ is the side draft of M.B. plough having pull 1000 N with angle of pull as 30° with horizontal plane as well as vertical plane.
  - (1) 866 N

(2) 433 N

(3) 1000 N

- (4) 100 N
- 72. The rainfall hyetograph gives time distribution of
  - (1) Rainfall volume

(2) Rainfall depth

(3) Rainfall intensity

- (4) Rainfall frequency
- 73. All spice combines in itself the odour and flavour of
  - (1) Nutmeg; Cardamom; Cumin and Anise
  - (2) Fennel; Cumin; Ginger and Cinnamon
  - (3) Nutmeg; Clove; Cinnamon and Pepper
  - (4) Cardamom; Clove; Saffron and Nutmeg



| 74. | Which of the following is a monocotyledon crop?   |  |       |                                    |  |
|-----|---|--|-------|------------------------------------|--|
|     | (1)   | Beetroot   | (2)   | Spinach                            |  |
|     | (3)   | Onion  | (4)   | Radish                             |  |
| 75. | 'Ambika' a mango hybrid is a cross between  |  |       |                                    |  |
|     | (1)   | ) Amrapali × Janardhan Pasand  |       |                                    |  |
|     | (2)   | 2) Amrapali x Alphanso   |       |                                    |  |
|     | (3)   | ) Amrapali × Vanraj  |       |                                    |  |
|     | (4)   | Neelum × Dashehari   |       |                                    |  |
| 76. | Litchi belongs to the family  |  |       |                                    |  |
|     | (1)   | Moraceae   | (2)   | Bromeliaceae                       |  |
|     | (3)   | Sapindaceae  | (4)   | Myrtaceae                          |  |
| 77. | Which of the following is the genomic constitution of Dwarf Cavendish and Robusta Banana? |  |       |                                    |  |
|     | (1)   | AAB  | (2)   | ABB                                |  |
|     | (3)   | AAA  | (4)   | AAAA                               |  |
| 78. | Skiffing is the lightest form of prunning in  |  |       |                                    |  |
|     | (1)   | Tea  | (2)   | Coffee                             |  |
|     | (3)   | Cardamom   | (4)   | Cinnamon                           |  |
| 79. | For retention of green colour of cardamom during storage, which of the following          |  |       |                                    |  |
|     | treatment is found best ?   |  |       |                                    |  |
|     | (1)   | (1) Soaking green (wet) cardamom in 2.0% sodium carbonate for 10 minutes |       |                                    |  |
|     | (2)   | Soaking green (wet) cardamom in 2.                                       |       |                                    |  |
|     | (3)   | Soaking green (wet) cardamom in 2.                                       | -     |                                    |  |
|     | (4)   | Soaking green (wet) cardamom in 2.                                       | .0% p | ootassium carbonate for 20 minutes |  |



| 80. | onkan Haritparni is the var  | riety of          |           |  |
|-----|--|-------------------|-----------|--|
|     | ) Tannia   | (2)               | Colocasia |  |
|     | 3) Arrow root  | (4)               | Cassava   |  |
| B1. | Following is/are among the various substances defined as "Food" according to "Food Safety and Standards Act 2006".  a. Genetically modified or engineered food |                   |           |  |
|     | i. Genetically modified or   | r engineered food |           |  |

- b. Water used during treatment of food
- c. Live animals
- d. Drugs and medicinal products

Which of the above is/are correct?

- (1) a only
- (2) a and b only
- (3) a, b and c only
- (4) All of the above
- 82. The sensitivity analysis of the project appraisal includes which of the following points?
  - 1. Consideration of the length of the period over the existing one.
  - 2. Changes (increase or decrease) in prices of goods and services of the project.
  - 3. Changes in the levels of cost.
  - 4. Changes in the yield levels of crops and livestock.
  - 5. Amount of subsidy released for project.

#### **Answer options:**

- (1) 1 2 3 5
- (2) 3 5 4 1
- (3) 4 2 1 3
- (4) 5 2 1 4



| 83. | Which of the following principles of farm finance is not included in 7Ps ? |                                 |     |       |
|-----|--|---------------------------------|-----|-------|
| os. |  |                                 |     |       |
|     | 1.   | Principle of personality        |     |       |
|     | 2.   | Principle of proper utilization |     |       |
|     | 3.   | Principle of repayment          |     |       |
|     | 4.   | Principle of subsidy            |     |       |
|     | 5.   | Principle of productivity       |     |       |
|     | 6.   | 6. Principle of penal interest  |     |       |
|     | 7.   | 7. Principle of protection      |     |       |
|     | 8. Principle of phased disbursement  |                                 |     |       |
|     | Answer options :   |                                 |     |       |
|     | (1)  | 2 and 7                         |     |       |
|     | (2)  | 3 and 5                         |     |       |
|     | (3)  | 8 and 1                         |     |       |
|     | (4)  | 4 and 6                         |     |       |
| 84. | Which of the following is a natural mineral fiber ?                        |                                 |     |       |
| 04. |  | _                               |     |       |
|     | (1)  | Glass                           | (2) | Nylon |
|     | (3)  | Asbestos                        | (4) | Rayon |
| 85. | Kwashiorkor disease due to lack of protein occurs in                       |                                 |     |       |
|     | (1)  | children aged 1 to 5 years      |     |       |
|     | (2)  | children aged 4 to 7 years      |     |       |
|     | (3)  | children aged 6 to 8 years      |     |       |
|     |  |                                 |     |       |

(4) children aged 2 to 8 years



| 86. | Which of the following method is used for separation of DNA fragments cut by restriction enzymes?   |  |       |                  |
|-----|---|--|-------|------------------|
|     | (1)   | PCR  |       |                  |
|     | (2)   | Western blotting                                     |       |                  |
|     | (3)   | Gel electrophoresis                                  |       |                  |
|     | (4)   | Centrifugation                                       |       |                  |
| 87. | Alexander Fleming noticed the mould growing on a petridish of bacteria preventing the duplication of bacteria, he identified that mould produced self defence chemical that could kill bacteria, is the first antibiotic penicillin in the year |  |       |                  |
|     | (1)   | 1828   | (2)   | 1945             |
|     | (3)   | 1928   | (4)   | 1857             |
| 88. | In western blotting technique are electrophoresed in polyacrylamide gel and transferred onto a nitrocellulose or nylon membrane.  |  |       |                  |
|     | (1)   | RNA  | (2)   | DNA              |
|     | (3)   | Proteins   | (4)   | All of the above |
| 89. | Recombinant DNA technology involves   |  |       |                  |
|     | (1)   | Improving the natural capabilities of                | micro | oorganisms       |
|     | (2)   | (2) Making them capable of novel processes           |       |                  |
|     | (3)   | (3) Discovering microorganisms with new capabilities |       |                  |
|     | (4)   | All of the above                                     |       |                  |
| 90. | In 1901 T. H. Morgan coined the term to denote the capacity of cell to develop into an organism by regeneration is called as  |  |       |                  |
|     | (1)   | Embryogenesis  |       |                  |
|     | (2)   | Totipotency  |       |                  |
|     | (3)   | Multipotency   |       |                  |
|     | (4)   | None of the above                                    |       |                  |
|     |   |  |       |                  |



| 91. | Release of hatchery reared young fish in open sea water is known as |  |     |              |  |
|-----|---|--|-----|--------------|--|
|     | a.  | Sea Urchin   |     |              |  |
|     | b.  | Sea Saw  |     |              |  |
|     | c.  | Sea Ranching   |     |              |  |
|     | d.  | Spawning   |     |              |  |
|     | Ans   | wer options :  |     |              |  |
|     | (1)   | a only   | (2) | a and b only |  |
|     | (3)   | c only   | (4) | d only       |  |
| 92. | Which layer of Lamellidens shell is called as "Mother of Pearl" ?   |  |     |              |  |
|     | (1)   | Nacreous   |     |              |  |
|     | (2)   | Prismatic  |     |              |  |
|     | (3)   | Periostracum   |     |              |  |
|     | (4)   | Conchiolin   |     |              |  |
| 93. | The   | The clarification of fruit juices is carried out by                      |     |              |  |
|     | (1)   | Proteases  | (2) | Pectinases   |  |
|     | (3)   | Lipases  | (4) | Cellulases   |  |
| 94. |   | are dilute acid and alkali insoluble structural and protective proteins. |     |              |  |
|     | (1)   | Prolamines   | (2) | Globulins    |  |
|     | (3)   | Scleroproteins   | (4) | Albumins     |  |
| 95. | What is purpose of food irradiation in poultry products ?           |  |     |              |  |
|     | (1)   | Inhibition of sprouting  |     |              |  |
|     | (2)   | Destruction of parasite  |     |              |  |
|     | (3)   | Inactivation of salmonella   |     |              |  |
|     | (4)   | Decontamination of food ingredients                                      |     |              |  |
|     |   |  |     |              |  |



- 96. The lethal dose of irradiation for human being is
  - (1)  $10^2 10^3$  rads
  - (2)  $10^3 10^5$  rads
  - (3)  $10^7 10^9$  rads
  - (4)  $10^5 10^7$  rads
- 97. \_\_\_\_\_ grape variety from the following is used for making white wine.
  - (1) Cabernet sauvignan
  - (2) Pinot blanc
  - (3) Petite sirah
  - (4) Pinot noir
- 98. The watery soft rot found mostly in vegetables is caused chiefly by
  - (1) Sclerotinia sclerotiorum
  - (2) Erwinia carotovora
  - (3) Penicillium digitatum
  - (4) Rhizopus stolonifer
- **99.** \_\_\_\_\_ parasitic infection is caused by consumption of raw or insufficiently cooked pork and pork products.
  - (1) Diphyllobothrium lactum
  - (2) Anisakis spp.
  - (3) Taenia solium
  - (4) Trichinella spiralis
- 100. \_\_\_\_\_ are associated with roasted and nutty flavours in heated foods.
  - (1) Pyrazines
  - (2) Esters
  - (3) Terpenes
  - (4) Lactones



# सूचना - (पृष्ठ 1 वरून पुढे.....)

- (8) प्रश्नपुस्तिकेमध्ये विहित केलेल्या विशिष्ट जागीच कच्चे काम (रफ वर्क) करावे. प्रश्नपुस्तिकेव्यतिरिक्त उत्तरपत्रिकेवर वा इतर कागदावर कच्चे काम केल्यास ते कॉपी करण्याच्या उद्देशाने केले आहे, असे मानले जाईल व त्यानुसार उमेदवारावर शासनाने जारी केलेल्या ''परीक्षांमध्ये होणाऱ्या गैरप्रकारांना प्रतिबंध करण्याबाबतचे अधिनियम-82'' यातील तरतुदीनुसार कारवाई करण्यात येईल व दोषी व्यक्ती कमाल एक वर्षाच्या कारावासाच्या आणि/किंवा रुपये एक हजार रकमेच्या दंडाच्या शिक्षेस पात्र होईल.
- (9) सदर प्रश्नपत्रिकेसाठी आयोगाने विहित केलेली वेळ संपल्यानंतर उमेदवाराला ही प्रश्नपुस्तिका स्वत:बरोबर परीक्षाकक्षाबाहेर घेऊन जाण्यास परवानगी आहे. मात्र परीक्षाकक्षाबाहेर जाण्यापूर्वी उमेदवाराने आपल्या उत्तरपत्रिकेचा भाग-1 समवेक्षकाकडे न विसरता परत करणे आवश्यक आहे.

| $\mathbf{T}$ | TTOI  |
|--------------|-------|
| नमना         | чун   |
| , , , , ,    | ~ 7 ' |

Pick out the correct word to fill in the blank:

Q. No. 201. I congratulate you \_\_\_\_\_\_ your grand success.

(1) for

(2) at

(3) on

(4) about

ह्या प्रश्नाचे योग्य उत्तर ''(3) on'' असे आहे. त्यामुळे या प्रश्नाचे उत्तर ''(3)'' होईल. यास्तव खालीलप्रमाणे प्रश्न क्र. **201** समोरील उत्तर-क्रमांक ''(3)'' हे वर्तुळ पूर्णपणे छायांकित करून दाखविणे आवश्यक आहे.

प्र. क्र. 201.

1 2

(4)

अशा पद्धतीने प्रस्तुत प्रश्नपुस्तिकेतील प्रत्येक प्रश्नाचा तुमचा उत्तर-क्रमांक हा तुम्हाला स्वतंत्ररीत्या पुरिवलेल्या उत्तरपित्रकेवरील त्या त्या प्रश्न-क्रमांकासमोरील संबंधित वर्तुळ पूर्णपणे छायांकित करून दाखवावा. ह्याकरिता फक्त काळ्या शाईचे बॉलपेन वापरावे, पेन्सिल वा शाईचे पेन वापरू नये.

कच्च्या कामासाठी जागा / SPACE FOR ROUGH WORK