

**QDB-29**This Question Booklet  
Contains 4 Printed Pagesપ્રશ્નપુસ્તિકા  
ક્રમાંક**Subject: Agriculture**

ઉમેદવારનો બેઠક નંબર

સમય : 3 કલાક  
કુલ ગુણ : 200Time : 3 Hrs.  
Total Marks : 200

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- N.B.:** 1) The question paper has been divided into three parts, “A”, “B” and “C”. The number of questions to be attempted and their marks are indicated in each part.
- 2) Answer the questions in English only.
- 3) Answer to all questions of each part should be written continuously in the script and should not be mixed with those of other parts. In the event of candidate writing answers to questions in a part different to the one to which the question belongs, the question shall not be assessed by examiner.
- 4) The candidate should write the answer within the limit of words prescribed in the parts “A”, “B” and “C”.

**PART - A****(40 Marks)**

- Instructions:*
- 1) Question No. 1 to 20.
  - 2) Attempt all 20 questions.
  - 3) Each question carries 2 marks.
  - 4) Answer should be given approximately in 20 to 30 words.

- 001.** What is the difference between particle density and bulk density? Give in the form of equation how you can calculate the pore space from particle density and bulk density values.
- 002.** In which agricultural university of Gujarat the ICAR coordinated project on Agro forestry is functioning? Mention important 3 agro forestry systems in Gujarat.
- 003.** Name different direct and indirect methods of soil moisture estimation.
- 004.** What do you mean by bio pesticides? Mention at least two bio pesticide used for crop protection.
- 005.** What do you mean by isotope? Name two isotopes which are widely used in soil fertility research.

006. Differentiate green manuring and green leaf manuring with example.
007. Define bio fertilizer and name nitrogenous bio fertilizers used for rice and gram.
008. State the National Research Centers of ICAR situated in Gujarat along with their location and major mandate.
009. Differentiate between fertilization and fertigation. What is the main reason for using water soluble fertilizers in drip irrigation?
010. What is a naturally ventilated green house and how is it different from net house.
011. What is the agricultural growth rate of Gujarat during 11th plan period and what is the per cent contribution of agriculture to GSDP of Gujarat?
012. Differentiate between relay cropping and multistoried cropping along with suitable examples.
013. What are the critical stages for irrigating wheat and gram?
014. Among the micro irrigation which method is more suitable for mango, banana, wheat and bajra.
015. Mention two crops in which tissue culture planting materials are widely used in Gujarat.
016. Expand the abbreviation of the following organizations/institutes: WTO, AFC, IPR, TRIPS, MANAGE, GGRC, NABARD and PRA.
017. Who is the chairman and who the members of ATMA management committee are?
018. Where are 'A', 'B' and 'R' lines used? Which of them are male sterile and which are male fertile?
019. What is geoinformatics? Name at least four areas in which geo informatics is applied for precision farming?
020. Differentiate between rouging and weeding.

**PART - B**

**(60 Marks)**

- Instructions:*
- 1) Question No. 21 to 32.
  - 2) Attempt all 12 questions.
  - 3) Each question carries 5 marks.
  - 4) Answer should be given approximately in 50 to 60 words.
- 021.** Define remote sensing and its uses in agriculture. Name the government organization working on remote sensing in Gujarat.
- 022.** What is soil erosion? Mention the types of water erosion. Write universal soil loss equation?
- 023.** Differentiate among relay cropping and multi storeyed cropping, strip cropping and mixed cropping along with suitable examples.
- 024.** What are the objectives of watershed management and mention any three agronomic measures adopted in watershed management?
- 025.** What are the soil moisture constants? Suggest the texture of the soils with the following available moisture (%) 8, 20, 25 and 38.
- 026.** What is ICT and briefly indicate how it helps in disseminating the information to end users?
- 027.** Recombinant DNA technology is an important tool for crop production - comment.
- 028.** Tabulate the major diseases of mango and banana along with their symptoms and chemical control measures.
- 029.** What is integrated weed management? How does it help in reducing weedicide usage?
- 030.** Name any five constraints facing Agri - Export sector in the state / country?
- 031.** What is organic farming? Indicate the constraints for its adoption. What is the role of APEDA in marketing organic produce?
- 032.** What are nucleus, breeder, and foundation, certified and truthful seeds. What should be the minimum isolation requirement (in meters) for foundation seed production of rice, cotton and cabbage?

**PART - C**

**(100 Marks)**

- Instructions:*
- 1) Question No. 33 to 39.
  - 2) Attempt any 5 out of 7 questions.
  - 3) Each question carries 20 marks.
  - 4) Answer should be given approximately in 200 words.

- 033.** Enlist the NARP Agro climatic zones in the state. Describe any two zones in the light of their climate, soils, crops and cropping pattern, sources of irrigation water along with their percentages and major soil and water management constraints and suggested management solutions for these constraints.
- 034.** Give recommended production technology for banana with reference to the following:  
  
Variety / spacing / fertilizer management / water management schedule including micro irrigation / sucker control and mulching. Enlist the products which can be prepared from ripe and unripe banana and banana pseudo stem.
- 035.** What are the different criteria for irrigation scheduling? Outline different surface irrigation methods. What are the preferred micro irrigation methods followed for bajra, wheat, maize, sugarcane, banana, groundnut, potato and mango?
- 036.** Differentiate saline, sodic and saline sodic soils and outline the methods of its reclamation.
- 037.** What is photosynthesis and factors affecting it? What are C<sub>3</sub>, C<sub>4</sub> and CAM mechanisms? Name crops/plants showing such mechanisms.
- 038.** What is agricultural extension? Briefly discuss different extension methods followed and name at least six visual aids used in extension.
- 039.** What do you understand by genetically engineered crops? What are the goals of genetic engineering? Mention adoption and its success of genetically modified crops in the areas of insect resistance, and plant propagation in Gujarat with examples.