

**RET/17/Test B****934 Food Science & Technology**Question Booklet No. .... **10010** .....(To be filled up by the candidate by **blue/black ball-point pen**)Roll No. 

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Roll No. (Write the digits in words) .....

Serial No. of OMR Answer Sheet .....

Day and Date .....

(Signature of Invigilator)

**INSTRUCTIONS TO CANDIDATES**(Use only **blue/black ball-point pen** in the space above and on both sides of the **Answer Sheet**)

1. Within 30 minutes of the issue of the Question Booklet, Please ensure that you have got the correct booklet and it contains all the pages in correct sequence and no page/question is missing. In case of faulty Question Booklet, bring it to the notice of the Superintendent/Invigilators immediately to obtain a fresh Question Booklet.
2. Do not bring any loose paper, written or blank, inside the Examination Hall *except the Admit Card without its envelope*.
3. *A separate Answer Sheet is given. It should not be folded or mutilated. A second Answer Sheet shall not be provided.*
4. Write your Roll Number and Serial Number of the Answer Sheet by pen in the space provided above.
5. *On the front page of the Answer Sheet, write by pen your Roll Number in the space provided at the top, and by darkening the circles at the bottom. Also, wherever applicable, write the Question Booklet Number and the Set Number in appropriate places.*
6. *No overwriting is allowed in the entries of Roll No., Question Booklet No. and Set No. (if any) on OMR sheet and Roll No. and OMR Sheet No. on the Question Booklet.*
7. *Any changes in the aforesaid-entries is to be verified by the invigilator, otherwise it will be taken as unfair means.*
8. *This Booklet contains 40 multiple choice questions followed by 10 short answer questions. For each MCQ, you are to record the correct option on the Answer Sheet by darkening the appropriate circle in the corresponding row of the Answer Sheet, by pen as mentioned in the guidelines given on the first page of the Answer Sheet. For answering any five short Answer Questions use five Blank pages attached at the end of this Question Booklet.*
9. For each question, darken only *one* circle on the Answer Sheet. If you darken more than one circle or darken a circle partially, the answer will be treated as incorrect.
10. *Note that the answer once filled in ink cannot be changed. If you do not wish to attempt a question, leave all the circles in the corresponding row blank (such question will be awarded zero marks).*
11. For rough work, use the inner back pages of the title cover and the blank page at the end of this Booklet.
12. Deposit *both OMR Answer Sheet and Question Booklet* at the end of the Test.
13. You are not permitted to leave the Examination Hall until the end of the Test.
14. If a candidate attempts to use any form of unfair means, he/she shall be liable to such punishment as the University may determine and impose on him/her.

[ उपर्युक्त निर्देश हिन्दी में अन्तिम आवरण-पृष्ठ पर दिये गये हैं। ]

Total No. of Printed Pages : 16

**FOR ROUGH WORK**

# Research Entrance Test – 2017

No. of Questions : 50

Time : 2 Hours

Full Marks : 200

- Note :** (i) This Question Booklet contains 40 Multiple Choice Questions followed by 10 Short Answer Questions.
- (ii) Attempt as many MCQs as you can. Each MCQ carries 3 (Three) marks. 1 (One) mark will be deducted for each incorrect answer. Zero mark will be awarded for each unattempted question. If more than one alternative answers of MCQs seem to be approximate to the correct answer, choose the closest one.
- (iii) Answer only 5 Short Answer Questions. Each question carries 16 (Sixteen) marks and should be answered in 150-200 words. Blank 5 (Five) pages attached with this booklet shall only be used for the purpose. Answer each question on separate page, after writing Question No.

1. Which lime is referred to as quick lime ?  
(1) CaO                      (2) Ca(OH)<sub>2</sub>                      (3) CaMg(CO<sub>3</sub>)<sub>2</sub>                      (4) CaCO<sub>3</sub>
2. Ooze test is done to detect :  
(1) Bacterial disease                      (2) Fungal disease  
(3) Viral disease                      (4) All of these
3. For test of goodness of fit, which statistical test is applied ?  
(1) 'χ<sup>2</sup>' test                      (2) 'F' test                      (3) 'Z' test                      (4) 't' test
4. Farm management is an :  
(1) Intra-farm science                      (2) Inter-farm science  
(3) Inter-regional farm science                      (4) International farm science
5. The term "Ever Green Revolution" was given by :  
(1) R. S. Paroda                      (2) V. L. Chopra  
(3) Norman Borloug                      (4) M. S. Swaminathan
6. "Operation flood" is related to :  
(1) Rice                      (2) Fish                      (3) Milk                      (4) Oilseeds
7. During prophase-I of meiosis crossing over occurs at :  
(1) Zygotene                      (2) Pachytene                      (3) Diplotene                      (4) Diakinesis
8. Larva of butterfly is known as :  
(1) Grub                      (2) Nymph                      (3) Catterpillar                      (4) Maggot
9. Marginal product is ratio of :  
(1) Input-Output                      (2) Output-Input                      (3) Cost-Income                      (4) Price-Income
10. Mendel did not work on which of the following ?  
(1) Plant height in pea                      (2) Seed colour in pea  
(3) Pod number in pea                      (4) Pod size in pea

11. Which of the following is anti-caking agent ?  
(1) Copper sulphate (2) Calcium silicate  
(3) Potassium carbonate (4) Gelatin
12. Koettstorfer number is also called as :  
(1) Iodine value (2) Saponification value  
(3) Hehner test (4) Kirschner value
13. Lactose increases the retention of :  
(1) Calcium (2) Valine (3) Iodine (4) Methionine
14. Caffeine is added to soft cola beverage :  
(1) 100 ppm (2) 200 ppm (3) 50 ppm (4) 300 ppm
15. Propionic acid is used as preservative in :  
(1) Milk products (2) Meats (3) Fruits (4) Baked goods
16. Which is not textural characteristics of curd ?  
(1) Firmness (2) Consistency (3) Cohesiveness (4) Springiness
17. Sweetened condensed milk contain :  
(1) 38-45% lactose (2) 20% lactose (3) 55% lactose (4) 30% lactose
18. Sodium azide is ..... in nature.  
(1) Bacteriostatic (2) Bacteriocidal (3) Antibiotic (4) Antifungal
19. Light transmission in milk bottles can be reduced by pigmenting with :  
(1) Aluminium chloride (2) Titanium Dioxide  
(3) Zinc (4) Silica
20. Aspartame provides :  
(1) 4 calories per gram (2) 9 calories per gram  
(3) 0.04 calories per gram (4) 0.004 calories per gram

21. During food preparation and processing, the application of dry heat can cause a change in the physical properties of starch. This is called :
- (1) coagulation (2) dextrinisation  
(3) emulsification (4) caramelisation
22. Refractive Index detector is used in the HPLC for analysis of :
- (1) Sugar (2) Fats (3) Vitamins (4) Proteins
23. Microencapsulation is an example of new technology used in food production. Microencapsulation consists of :
- (1) packaging food items in individual portions.  
(2) adding a functional ingredient to a food product.  
(3) packaging liquid food products in a sterile container.  
(4) packaging small particles of an active or functional ingredient in a minute capsule.
24. Yoghurt is prepared using a pair of microorganisms. Choose the correct pair from the following :
- (1) *Lactobacillus bulgaricus*, *Streptococcus thermophilus*  
(2) *Lactobacillus lactis*, *Streptococcus thermophilus*  
(3) *Lactobacillus bulgaricus*, *Streptococcus lactis*  
(4) *Lactobacillus lactis*, *Streptococcus lactis*
25. The brown colour of bread crust during baking is due to Maillard reaction between :
- (1) aldehyde groups of sugars and amino groups of proteins  
(2) aldehyde groups of sugars and vitamins  
(3) aldehyde groups of sugars and salt  
(4) starch and yeast
26. The primary bacterial spoilage of poultry meat at low temperature, with characteristic sliminess at outer surface, is caused by :
- (1) *Pseudomonas spp.* (2) *Aspergillus spp.*  
(3) *Bacillus spp.* (4) *Candida spp.*

27. Thermal death of viable spores of *Bacillus subtilis* in a food sample follows a first order kinetics with a specific death rate constant of  $0.23 \text{ min}^{-1}$  at  $100^\circ\text{C}$ . The time (in minutes) required to kill 99% of spores in the food sample at  $100^\circ\text{C}$  will be :
- (1) 10                      (2) 20                      (3) 23                      (4) 60
28. Among the following fatty acids, which group is known as essential fatty acids ?
- (1) 9, 11-Octadecadienoic and 9, 11, 13-Octadecatrienoic  
(2) 9, 12-Octadecadienoic and 9, 12, 15-Octadecatrienoic  
(3) 9-Octadecenoic and 9, 11-Octadecadienoic  
(4) 9, 11-Octadecadienoic and 9-Eicosenoic
29. Reassociation of amylose and formation of crystalline structure upon cooling of cooked starch solution is termed as :
- (1) Syneresis                      (2) Gelatinization  
(3) Retrogradation                      (4) Denaturation
30. A mild heat treatment of foods that destroys pathogens and extends its shelf life is called :
- (1) Baking                      (2) Blanching  
(3) Sterilization                      (4) Pasteurization
31. Natural casing of sausages made from :
- (1) Cleaned papaya leaves                      (2) Cleaned animal  
(3) Cleaned colon                      (4) Cleaned animal intestine
32. What is OHSAS ?
- (1) Operational hazard safety application system  
(2) Occupational hazard safety application system  
(3) Occupational health safety assessment series  
(4) Operational health safety assessment series

- 33.** Dunnett test is :
- (1) A test for monitoring the quality of imported grains in terms of pesticide content
  - (2) Applied to compare the treatment against a predetermined control
  - (3) For the test of GM foods
  - (4) To decide whether a company has followed PFA standards
- 34.** Rotor vane is a instrument used :
- (1) Withering leaf
  - (2) Packing of leaf
  - (3) Drying of leaf
  - (4) None of the above
- 35.** Storage of food under reduced pressure is called :
- (1) Aseptic packaging
  - (2) Hyperbaric storage
  - (3) Hypobaric storage
  - (4) Gas packaging
- 36.** What is OTR ?
- (1) Odour transfer rate
  - (2) Oxygen transfer rate
  - (3) Oxygen testing result
  - (4) Odour testing result
- 37.** Sucrose is one of the major etiologic factors in :
- (1) Fibre consumption
  - (2) Diabetes
  - (3) Colon cancer
  - (4) Dental carries
- 38.** The reaction an anion or cation with water accompanied by cleavage of O-H bond is called :
- (1) Neutralization
  - (2) Hydrolysis
  - (3) Acidification
  - (4) Ionization
- 39.** Dole process is the example of :
- (1) Heat-cool-fill
  - (2) Cold sterilization
  - (3) Batch pasteurization
  - (4) None of the above
- 40.** The time of heating at a temperature to cause 90% reduction in count of viable spores is called :
- (1) D value
  - (2) F value
  - (3) Z value
  - (4) Lethal rate



*Attempt any five questions. Write answer in 150-200 words. Each question carries 16 marks. Answer each question on separate page, after writing Question Number.*

1. RFID in food packaging.
2. Omega-3 fatty acids.
3. Acrylamide formation in food.
4. Malolactic fermentation.
5. Maillard browning.
6. Pulse Electric Field Processing.
7. Extrinsic factors affecting food spoilage.
8. Caramelization.
9. ISO 22000.
10. Minimal Processing.

*Roll No. :* .....

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Q. No. :

FOR ROUGH WORK

## अभ्यर्थियों के लिए निर्देश

(इस पुस्तिका के प्रथम आवरण-पृष्ठ पर तथा उत्तर-पत्र के दोनों पृष्ठों पर केवल नीली/काली बाल-प्वाइंट पेन से ही लिखें)

1. प्रश्न पुस्तिका मिलने के 30 मिनट के अन्दर ही कृपया देख लें कि प्रश्नपत्र में सभी पृष्ठ मौजूद हैं और कोई प्रश्न छूटा नहीं है। पुस्तिका दोषयुक्त पाये जाने पर इसकी सूचना तत्काल कक्ष निरीक्षक को देकर सम्पूर्ण प्रश्नपत्र की दूसरी पुस्तिका प्राप्त कर लें।
2. परीक्षा भवन में लिफाफा रहित प्रवेश-पत्र के अतिरिक्त, लिखा या सादा कोई भी खुला कागज साथ में न लायें।
3. उत्तर-पत्र अलग से दिया गया है। इसे न तो मोड़ें और न ही विकृत करें। दूसरा उत्तर-पत्र नहीं दिया जायेगा।
4. अपना अनुक्रमांक तथा उत्तर-पत्र का क्रमांक प्रथम आवरण-पृष्ठ पर पेन से निर्धारित स्थान पर लिखें।
5. उत्तर-पत्र के प्रथम पृष्ठ पर पेन से अपना अनुक्रमांक निर्धारित स्थान पर लिखें तथा नीचे दिये वृत्तों को गाढ़ा कर दें। जहाँ-जहाँ आवश्यक हो वहाँ प्रश्न-पुस्तिका का क्रमांक तथा सेट का नम्बर उचित स्थानों पर लिखें।
6. ओ० एम० आर० पत्र पर अनुक्रमांक संख्या, प्रश्न-पुस्तिका संख्या व सेट संख्या (यदि कोई हो) तथा प्रश्न-पुस्तिका पर अनुक्रमांक संख्या और ओ० एम० आर० पत्र संख्या की प्रविष्टियों में उपरिलेखन की अनुमति नहीं है।
7. उपर्युक्त प्रविष्टियों में कोई भी परिवर्तन कक्ष निरीक्षक द्वारा प्रमाणित होना चाहिये अन्यथा यह एक अनुचित साधन का प्रयोग माना जायेगा।
8. इस पुस्तिका में 40 बहुविकल्पीय प्रश्नों के साथ 10 लघु उत्तरीय प्रश्न हैं। प्रत्येक बहुविकल्पीय प्रश्न के लिए, आपको उत्तर-पत्र के प्रथम पृष्ठ पर दी गयी गाइडलाइन के अनुसार सही विकल्प के लिए उत्तर-पत्र की संगत पंक्ति में उपयुक्त गोले को पेन द्वारा काला करना है। किन्हीं पाँच लघु उत्तरीय प्रश्नों के उत्तर देने के लिए प्रश्न-पुस्तिका के अन्त में संलग्न पाँच रिक्त पृष्ठों का प्रयोग कीजिए।
9. प्रत्येक प्रश्न के उत्तर के लिये केवल एक ही वृत्त को गाढ़ा करें। एक से अधिक वृत्तों को गाढ़ा करने पर अथवा एक वृत्त को अपूर्ण भरने पर वह उत्तर गलत माना जायेगा।
10. ध्यान दें कि एक बार स्याही द्वारा अंकित उत्तर बदला नहीं जा सकता है। यदि आप किसी प्रश्न का उत्तर नहीं देना चाहते हैं, तो सम्बन्धित पंक्ति के सामने दिये गये सभी वृत्तों को खाली छोड़ दें। ऐसे (प्रश्नों पर शून्य अंक दिये जायेंगे।)
11. रफ कार्य के लिये इस पुस्तिका के मुखपृष्ठ के अंदर वाला पृष्ठ तथा अंतिम खाली पृष्ठ का प्रयोग करें।
12. परीक्षा के उपरान्त ओ० एम० आर० उत्तर-पत्र एवं प्रश्न पुस्तिका दोनों परीक्षा भवन में जमा करें।
13. परीक्षा समाप्त होने से पहले परीक्षा भवन से बाहर जाने की अनुमति नहीं होगी।
14. यदि कोई अभ्यर्थी परीक्षा में अनुचित साधनों का प्रयोग करता है, तो वह विश्वविद्यालय द्वारा निर्धारित दंड का/की भागी होगा/होगी।

SEAL