

# **Ph.D. ENTRANCE EXAMINATION – 2021**

**For Admission to Doctorate Degree Programme in Agriculture and Allied Sciences in  
State Agriculture Universities of Rajasthan**



## **GENERAL GUIDELINES For Admission to Ph.D.**

**Agriculture  
Horticulture  
Home Science  
Forestry**



**Conducted by  
SRI KARAN NARENDRA AGRICULTURE UNIVERSITY  
Jobner-303 329  
Jaipur- Rajasthan**

**ऑनलाइन आवेदन फॉर्म बिना विलम्ब शुल्क जमा  
करने की अन्तिम तिथि : 17.05.2021**

**प्रवेश परीक्षा की तिथि : 11.07.2021**

**For any kind of disputes/ litigation, the jurisdiction relating to the admission process through  
JET/Pre P.G. and Ph.D. Entrance Examination-2021 will be of Hon'ble Rajasthan High Court,  
(Jaipur Bench), Jaipur.**

## GENERAL GUIDELINES

The Ph.D. Entrance Examination is conducted for admission to different Doctorate Degree Programme in Agriculture and Allied Science offered by State Agriculture Universities of Rajasthan (AU, Kota, SKRAU, Bikaner, MPUAT, Udaipur, SKNAU, Jobner and AU, Jodhpur).

Candidates are advised to read all the instructions of the Ph.D. guidelines before filling online application form.

### 1.0 ONLINE SUBMISSION OF APPLICATION FORM

- Only online application form will be accepted on <http://www.jet2021sknau.com>.
- The online application form can be filled as per schedule dates (ANNEXURE-IV) of admission process and instructions given at point no. 4.0.
- There will be separate question paper for each subject and candidate has to select the subject of his/her eligibility. M.Sc. in respective subject is essential.
- The candidate can edit the application form till given date except the information related to fee. **Do not disclose the password to any one as he/she may change your details and misuse it.** The organizers will not be responsible for such changes and consequences thereon.
- **Deposition of application fees:** The fee is Rs. 3500/- (excluding bank charges if any) for UR/ OBC/ MBC/EWS candidates and Rs. 2000/- (excluding bank charges if any) for SC/ST/SAP (40 % and above disability) candidates. **Amount is to be deposited online only. This amount is not refundable/ transferable/ adjustable in any case.**

### 2.0 ELIGIBILITY CRITERIA FOR ADMISSION

- A candidate must ensure that he/she is eligible for admission to various courses before filling the online application form for Ph.D. Entrance Examination. If a non-eligible candidate is admitted due to any reason then the admission of such candidate will be cancelled as soon as the mistake is detected even at later stage. Various eligibility criteria for admission through entrance test are as under:

#### 2.1 EDUCATIONAL QUALIFICATION:

- Only those candidates who have their Masters degree in respective faculty subject and fulfill the qualification as prescribed as under are eligible to apply.
- The candidates who have passed the M.Sc. in the respective subject from any State Agriculture Universities with 6.5 OGPA or equivalent. In case degree awarded below 6.5 OGPA by State Agriculture Universities, 5% relaxation will be allowed to candidate belonging to SC/ST/OBC (Non-creamy layer)/MBC/SAP/EWS category. **The candidates taking the advantage of 5% relaxation will not be considered in UR category.** Degree/Provisional degree certificate is essential at the time of filling the option form.
- Candidates who have appeared at any of the aforesaid qualifying examinations and whose results have not been declared before the commencement of the entrance examination shall provisionally be allowed to appear in the examination. The result of the examinations i.e. PDC/Transcript is essential at the time of filling the option form.
- **Candidates who have completed their PG Degree programme through Pre-PG / National level/ State level entrance examination or the candidates completed their PG degree programme from SAU,s and their constituent colleges of Rajasthan.**

- The candidates must have completed four year UG and two year PG degree programme for admission in Ph.D. Home Science from any recognized university.

## 2.2 DOMICILE CRITERIA/RESIDENTIAL REQUIREMENT

The Examination is open to the candidates of Rajasthan domicile only or a candidate must fulfil the following conditions for admission:

- The candidate must have studied for the last three years continuously as a regular student in recognized institution in Rajasthan i.e. passed 10<sup>th</sup> and 10+2 (in the qualifying subjects) from schools located in Rajasthan.

**OR**

- Natural Father/Mother of the candidate has been continuously residing in Rajasthan for a period of last 10 years and the candidate has studied for at least 5 years during this period in the recognized educational institution in Rajasthan.

**OR**

- The candidate must be a bonafide resident of Rajasthan. He/She may be presently studying in any of the states other than Rajasthan.

**OR**

- The candidate is a son/daughter of a serving or retired employee of (a) Government of Rajasthan and Officer of All India Services of the State Cadre of Rajasthan or (b) Undertaking/ Corporation/ Improvement Trust/ Municipal Bodies duly constituted by the Government of Rajasthan by an act of Law or (c) any of the State Universities in Rajasthan or Board of Secondary Education, Rajasthan provided that the employee has worked in Rajasthan for **three years preceding the last date of submission of the application.**

**OR**

- Candidate is a son/daughter of a permanent or retired employee of Indian Defence Service (Army/Navy/Air force) and the employee is either of Rajasthan origin irrespective of his/her place of posting or is posted in Rajasthan at the time of last date of the application for admission provided that in case the defence personnel is of Rajasthan origin, a Certificate has to be submitted by him/her from the employer to the effect that his/her State of origin is Rajasthan at the time of entry in to service.

**OR**

- Candidate is a son/daughter of serving/retired employee of **Para-Military Forces of India** and the employee is either of Rajasthan origin irrespective of his/her place of posting or is posted in Rajasthan at the time of last date of application for admission provided that in case of Para-Military Personnel from the Rajasthan origin, a certificate has to be submitted by him/her from the employer to the effect that his/her State of origin is Rajasthan at the time of entry into service.

**OR**

- Candidate is a son/ daughter of a Judge of Rajasthan High Court subject to that he/she submit an undertaking/affidavit stating that such benefit is not claimed or availed by them in any other State.

### Note:

- The relevant original documents / certificates which are the basis of eligibility of the candidate are to be furnished by the candidate at the time of registration in the college along with one self-attested set of above documents and photograph.
- The certificate of bonafide resident of Rajasthan will have to be duly signed by the District Magistrate of the concerned District or officer authorized by him, and must bear the authenticated photograph of the candidate.

- In case of serving personnel, where in-service conditions have resulted into eligibility, a certificate of the employer will have to be submitted by the candidate, with appropriate authentication, identification and verification.

### 3.0 RESERVATION OF SEATS

- The reservation of seats for various categories will be as per the rules of Government of Rajasthan and subsequently adopted **by state agricultural universities**.
- The caste certificate must bear the photograph of candidate and must be issued by the competent authority.
- In case of OBC, the certificate should not be older than **One Year** and it must clearly indicate non creamy layer. Such certificate along with affidavit of non-creamy layer should not be before **24.03.2020**.

**3.1** Reservation forwards of defence personnel will be in following priority order (Submit certificate in format as per **ANNEXURE-I** or having certificate details. Certificate with incomplete information will not be considered for defence ward benefit). In pursuance to Deputy Secretary Agriculture (Gr. III) letter No. प. 3(9)कृषि-3 / 2018 जयपुर दिनांक 03.07.2018.

**Priority – I:** Widows/Wards of Defence Personnel Killed in Action.

**Priority- II:** Wards of disabled in action and boarded out from service.

**Priority-III:** Widows/Wards of Defence Personnel who died while in service with death attributable to military service.

**Priority-IV:** Wards of disabled in service and boarded out with disability attributable to military service.

**Priority-V:** Wards of Ex-Servicemen and serving personnel who are in receipt of Gallantry Award: [i. Param Vir Chakra; ii. Ashok Chakra; iii. Maha Vir Chakra; iv. Kirti Chakra; v. Vir Chakra; vi. Shaurya Chakra; vii. Sena, Nau Sena, Vayu Sena Medal; viii. Mention-in-Despatches].

**Priority-VI:** Wards of Ex-Servicemen.

**Priority-VII:** Wives of (i. defence personnel disabled in action and boarded out from service; ii. defence personnel disabled in service and boarded out with disability attributable to military service; iii. ex-servicemen and serving personnel who are in receipt of Gallantry Awards).

**Priority-VIII:** Wards of Serving Personnel.

**Priority- IX:** Wives of Serving Personnel.

- The domicile requirement for the wards of the defence personnel from the State of Rajasthan but serving in other State is waived off. For wards of defence personnel from other State but serving in the State of Rajasthan, the domicile condition is waived off to enable them to be selected in general quota. However, they would not be eligible for the above mentioned concessions.
- 50 % of the reserved seats of defence quota will be earmarked for the girls. In case of non-utilization by girls, the vacancies would revert back to the boys' category.
- Candidates are requested to upload the valid relation certificate issued by competent Army authority where priority should be clearly mentioned. Please note that Army Canteen Cards or ID cards, PPO etc. will not be considered as valid document for defence ward benefit.

### 4.0 INSTRUCTIONS FOR FILLING ONLINE APPLICATION FORM

The application will be accepted online only. The process of online submission of application form will be available at the website <http://www.jet2021sknau.com> link of this website will also be available on SKNAU, Jonber website [www.sknau.ac.in](http://www.sknau.ac.in). The examination schedule is given in ANNEXURE-IV.

- Date of commencement for filling the online application : 24.03.2021
- Last date for filling and online depositing the application forms without late fee : 17.05.2021
- Last date for filling & online depositing the application forms with late fee Rs. 500/- : 22.05.2021
- Last date for editing the application form : 24.05.2021

### **Step-1: Off line preparation for filling the Online Application Form:**

**Candidates are advised to go through these instructions before filling of application form, he or she must keep all relevant documents ready to avoid any reason for non accepting the form by the system.**

- To upload photo and signature online with application form, scan a recent photograph not older than six months showing the date and name on the photograph of 5H x 4W cm size. Paste the photograph on plain paper and sign below the photograph 2H x 4W cm size. Scan it in jpg/ jpeg/ pjpeg/ png/ bmp/ tif/ gif format with 80 pixels per inch resolution. The image size of photo with signature should be in between 30 to 50 KB. Sample image is already given on the web site. Image of the candidate will be displayed after upload. The Photograph will be displayed after proper uploading. All other documents should be uploaded in "**PDF**" format with 100 to 200 KB size.
- Fee concession certificate i.e. caste category and/or specially disabled person certificate indicating 40% and above disability should be scan in "**PDF**" format having size **100 to 200 KB**.
- Scan mark sheets of X and XII examination and PDC (if passed already) of UG and PG in "**PDF**" format having size **100 to 200 KB**.
- Mobile number on which candidate wants to get SMS related to this examination from Coordinator office. **All the information will be sent through SMS on this mobile.** Use your own or close relative mobile number and avoid mobile number of Coaching Centre and E-Mitra. Not more than three applications will be accepted on a common mobile number.
- **In case non availability of mobile number or change in mobile number or net work problem candidate will not get the information for which Coordinator office will not bear any responsibility.**

### **Step-2: Depositing the fees**

- Candidate must read the instructions given on the web site carefully.
- Ph. D application form fee is Rs. 3500/- + Bank charges, if any for all the candidates. For candidates of SC/ST/SAP (40% and above disability) of Rajasthan, the fee will be Rs. 2000/- + Bank charges, if any. Application form fee **amount is to be deposited online only. This amount is not refundable/ non-transferable/ non-adjustable in any case.**
- Deposit the fees from your own **or** close relative account/credit/debit card and note down transaction detail including Bank account number, transaction ID and date for refund if any. Avoid the account **or** credit/debit card of E-Mitra **or** any other agency. If use in compulsion, then note down transaction details including Bank account number, transaction ID and date to avoid difficulty in case of refund, if any.

- Candidates are advised to keep the details of bank account viz., Name of the bank and branch, account holders' name, number, type of the account etc. for ready reference in near future correspondence.

### **Step-3: Filling of Online Application Form**

- The entries of online application form must be filled as required. Check all entries & spelling before final submission.
- Candidate should ensure that the photo and signature belongs to the same person i.e. his/her only.
- The changes (if required) will be allowed in online application form up to a given date using registration number and password. **Keep the password very safe as anyone can change your details and misuse it. Due to this for any change in your application form coordinator office will not be responsible. Do not share the password details.**

### **Step-4: Printing of application form**

- Click the Print button on the web portal and get print of application form. Keep this print for your record. If print application form option is not available it means your application is not successfully submitted.
- **Candidates need not to send hard copy of application to the JET Coordinator Office.**

### **5.0 ADMIT CARD**

- Admit card will be available on web site <http://www.jet2021sknau.com> from given date in the schedule to till the commencement of exam. **No admit card will be sent by post or personally to the candidates.** The Coordinator reserves the right to withdraw the permission granted by error to a candidate who is not eligible to appear in the examination even though the admission card has been issued and produced by the candidate before the centre superintendent.

### **6.0 EXAMINATION SCHEME**

- In the very nature of competitive examination, no syllabus can be prescribed. It is an exercise to pick up the best. However, a broad outline is given as appended in **ANNEXURE-II**. There would be a separate question paper for each subject and candidate must ensure the same.
- The Question Paper in the form of test booklet would be covering the entire subject studied in post graduate degree programmes. Broad outline of subject content is given in the syllabus.
- The question paper will be only in English language consists of 100 multiple choice questions (MCQs) from the Broad Outlines of Syllabus for Doctorate Degree Programme - 2021 as per attached **ANNEXURE-II**.
- The candidates are required to choose the most appropriate option and blacken the corresponding circle with the black ball point pen in the OMR sheet (Details for filling answer sheet are given on back side of OMR sheet). The test booklet may be used by the candidates for rough work and the squares printed in it may be used for deciding the correct answer. Assessment will be made only on the basis of marking on the OMR sheet. At the end of examination candidates may carry question booklets with them.
- After obtaining the objections, if any question found ambiguous or having ambiguous answer (correct answer more than one or no correct answer) will be dropped and marks obtained will be used for preparation of merit on the basis of marks in remaining questions.

### **7.0 WRITTEN EXAMINATION SCHEDULE:**

**Written examination will be conducted as per schedule from 11.00 AM to 1:00 PM on 11.07.2021**

The schedule of the test will be:

- Candidate should report to the examination centre : 10:00 AM
- No candidate will be permitted after : 10:45 AM
- Commencement of the examination : 11:00 AM
- Candidate will not be allowed to leave the examination hall before : 01:00 PM

**NOTE:** Information regarding college wise number of seats, filling of option form etc. for seeking admission will be displayed after declaration of result.

### **8.0 INSTRUCTIONS FOR WRITTEN EXAMINATION**

- To avoid delay in reaching to centre on the day of examination, candidates are advised to visit centre or confirm the address of centre and mode of transport one day prior to the examination.
- The centre will be allotted to the candidate mentioned in the application form.
- Request for change in examination center will not be considered.
- The examination will be held as per the programme given as above mention. The doors of examination centre will be opened at 10.00 AM.
- The candidate should ensure that he/she occupies the allotted seat at allotted place well in time only
- Any candidate occupying the seat of another candidate or change the place shall be treated as case of unfair means and his/her candidature will not be considered for admission

### **8.1 Candidates should bring the following documents/items at the time of examination**

- i. The admit card downloaded from the website <http://www.jet2021sknau.com> for your entry in the examination center and hall.
- ii. **Original recent photo ID: Bring one photo ID in original along with one passport size photo similar with uploaded in application form otherwise you will not be allowed to appear in examination. Photo ID preferably (Aadhar card/ PAN card/ Driving license or ID of the Institute affiliated to any recognized Board or University attended during 2020-21). Photo ID card of any coaching institute shall not be permissible as ID.**
- iii. Use only black ball point pen provided at the centre for marking the answers.

**8.2** Candidates should not bring any text-book or notes, log tables, calculators, cell phone, purse/bag, watch, jewellery, any electronic gadget by which communication is possible and any other objectionable material with them in the examination hall. All kinds of electronic devices are not allowed in the campus of examination centre. Having any electronic device, paper, book or purse with you in exam hall, talking with any other person in examination hall or showing question booklet/ OMR/answers to others, removing any page from question booklet, seating at other then allotted seat and disobeying the instruction will be treated as unfair means.

**8.3 Dress code:-** Half sleeves shirt/ T- shirt (Boys), Half sleeves kurta / top(girls),Sandal or sleeper in feet. Wearing shoes, shocks, wrist watch, ear or nose pins, lockets in chain or any kind of ornament will not be allowed during examination. Wearing of specific dress of any coaching institute should be avoided.

- All Jewellery should be removed at the home so that no problem may arises at examination centre, to remove the same and theft if any, Centers shall not be responsible for security of belongings of candidates. With jewellery candidate will not be allowed in examination centre.

### **8.4 Discipline and unfair means**

- During the course of examination, the candidate shall be under the discipline and control of the

Centre Superintendent and shall abide by the instructions issued during the examination by the invigilators or the Centre Superintendent from time to time.

- Candidate found acting in a manner, which in the opinion of the invigilator, is liable to give unfair advantage to another candidate, shall be treated as case of unfair means and his/her candidature will be cancelled.
- The Invigilators, Flying squad and Centre Superintendent shall be competent to take search of any candidate. A candidate possessing objectionable material or resisting search shall be punishable as per rules of unfair means and lose his/her candidature.
- Candidate resorting to use of unfair-means shall be turned out of the examination hall/room and his examination shall be treated as cancelled. The Centre Superintendent shall be the judge to determine whether unfair-means have been resorted to. The centre superintendent will submit the report stating full facts of the case of unfair-means to the JET Coordinator for further necessary action, required if any.
- Examinees can use only the urinals available in the centre and earmarked for them. For this the candidate shall not leave the examination room without the permission of the invigilator and escort. Permissible only in case of emergency.
- Smoking and consumption of other in toxicants by the candidates are strictly prohibited in the examination hall/room/centre and will be treated as unfair means.

**8.5 Question booklet/OMR Sheets:** Candidates should carefully read the instructions given in the question paper booklet and OMR before they begin to mark their answers.

- No guarantee is given to the candidates regarding the order of the questions in question paper.
- The question paper will be only in English language.
- Soon after the question booklet is given to the candidate, he/she should ensure before writing his role number that it is sealed and contains all the pages and no question is missing.
- Entry of booklet number and series code on OMR should be done only after getting proper question booklet and satisfying yourself.
- Question booklet/OMR sheet shall be replaced to candidate only when there is any printing defect/torn condition within 10 minutes *i.e.*, upto 11:10 AM. Do not use Eraser, Correcting Fluid or Blade to make any correction in OMR.
- Before attempting the answers, the candidate shall write his/her Roll number and other details at the place provided for the purpose on the test booklet and OMR sheet. The candidate should indicate the answer by blackening the circle with black ball point pen provided for the purpose in the OMR sheet itself, otherwise his/her answer will not be evaluated. Candidate must ensure that their OMR has been duly signed by invigilator also.
- The candidate should not write his/her name or any sign/mark at any place on the OMR sheet, which may disclose his/her identity else there candidature will be cancelled.
- Sample of OMR is given in **ANNEXURE-III**.

**8.6 EVALUATION OF OMR SHEETS:** The OMR sheets will be evaluated and marks will be displayed as per schedule date given in **ANNEXURE-IV**.

- Four marks will be awarded for every correct answer and one mark will be deducted for every wrong answer (**Negative marking**). If more than one option is chosen, it will be treated as wrong answer. No marks will be awarded or deducted for unmarked/un-attempted questions.
- Candidate should note that there will be no re-evaluation of the OMR sheet.
- **Candidate can challenge the answer key as per given schedule (objection on any question) by**



paying Rs. 500/- towards processing fees per question, the fees can be paid online through Debit/Credit/Net Banking etc. Candidate should note that the fee paid will be refunded if the challenge is found correct and forfeited if incorrect. However, no challenge will be entertained without receipt of processing fees.

- After obtaining the objections, if any question found ambiguous or having ambiguous answer, correct answer more than one, no correct answer will be dropped and merit will be prepared accordingly.
- Revised marks will be updated and filling the option form will be allowed as per schedule in ANNEXURE-IV

**NOTE:** Information regarding college wise number of seats, filling of option form *etc.* for seeking admission will be displayed after declaration of result.

- The result of the test will be declared on specified date. No enquiries by email, telephone or post concerning the result will be attended by the Office of the JET Coordinator.

### **9.0 ELIGIBILITY FOR ONLINE OPTION FORM**

- All the candidates appeared in Ph. D Entrance Examination-2021 will be eligible for filling online option form during the admission process, irrespective of marks obtained.

### **10.0 FILLING THE ONLINE OPTION FORM**

- There is online option form fee of Rs 5000/-. The bank charges will be charged extra. Deposit the online fee from your own or relatives bank account/debit or credit card. Avoid E-Mitra account or do not close the account so you may not face any problem in refund if any. Please note down the bank details such as Account number, transaction ID and date etc. it will be helpful in refund if any
- **Candidate must read the instructions and Schedule in ANNEXURE-IV very carefully before filling up the option form to avoid any mistake.**
- Candidate must keep ready the information and list of subject along with colleges with order of choice on a separate paper and mark sheets or desired certificates if any.
- **There will be no provision for any change/modification after final submission of the option form however candidate may edit the option up to stipulated date.**
- Candidate willing to seek admission **on payment seat** should also fill the option for the same with appropriate number of choice. These seats will also be filled from the same merit.
- Details about college, fees and hostel facility may be obtained from “**About the Colleges**” of this web site or he/ she may contact to the college directly.
- Fees of Rs. 5000/- deposited with option form (online) will be adjusted in college fees of the candidate. **In case of not reporting in time this amount will be forfeited** i.e. neither it will be refunded to the candidate nor transferred to the institute where candidate admitted provisionally.
- **Candidate is advised to check the correctness of information before submitting the option form. In case of any wrong information the admission will be cancelled at college level and candidate will be treated as not reported and this seat will be allotted to another candidate in next counselling and option form fee will be forfeited.**
- If candidate will not get admission in any of the institute filled in option form the fee will be refunded through the same channel where from he/she paid the fees.
- **In case amount is deposited from E-mitra or any other agency account take all bank details where from this amount has been deducted. As amount will be refunded in this account and he**

**may not refuse to pay the refund. Jet Coordinator office will not be responsible for preparing the bank details of refund amount.**

### **11.0 Seat Allotment**

- Seat in college and universities will be allotted on the basis of marks obtained in Ph. D Entrance Examination, choice filled by candidate in option form and reservation policy. The roster will start from next point where admission was stopped last year.
- In case of any tie, the tie will be broken on the basis of higher marks obtained in PG then in UG followed by 12<sup>th</sup> & 10<sup>th</sup>, and then more in age will be given priority.
- Through above option form, three times seats will be allotted.
- **The reserve seats will be allotted to reserve candidates only based on merit, 200 point roster and candidate choice, if option form of those category candidates is available. Else, the seat will be allotted of respective reserve seats followed same pattern of merit, 200 point roster and candidate choice, where from that seat get reserve.**

### **11.1 Upward Assessment**

#### **First upward assessment and second counselling:**

- If the candidate gets institution in first allotment, either deposit the fees of that institution online or apply for upward assessment in case he/she wants to change the institution. Candidates have to pay non-refundable online fee of Rs 800/- for upward assessment else, the candidate will be treated as not reported.
- The seats of not reported candidates and candidates applied for upward assessment and gets other institution, will be filled by the remaining candidates and candidates applied for upward assessment on the basis of merit. The reserve seat will be filled by the same category candidates, if no such candidate is available, the roster will start from next point where admission was stopped last year.

#### **11.2 Second upward assessment and third counselling:**

- Candidates get seat in second allotment (upward or new) have to either deposit the fees of that institution online or apply for further upward assessment. In case he/she wants to change the institution have to pay online fee of Rs 800/- else candidate will be treated as not reported.
- The seats of not reported candidates and candidates applied for upward assessment and get so their institution will be filled by the remaining candidates and candidates applied for upward assessment on the basis of merit and taking reservation under consideration. The reserve seat will be filled by the same category candidates, if no such candidate is available, the roster will start from next point where admission was stopped last year.
- On or before stipulated date the candidates get seat in third allotment has to deposit the fees of that institution online else candidate will be treated as not reported.
- The upward assessment fee of Rs.800/- is non-refundable whether candidates get better choice from the option form or not.
- After upward assessment if he/she get any other college or allotment remain unchanged, he or she will be required to accept final allotment and deposit the requisite fee of allotted college otherwise the admission will be treated as cancelled and amount of Rs.5000/- deposited will be forfeited.

### **12.0 REPORTING IN THE INSTITUTION**

- All original documents are to be submitted to the allotted college at the time of registration.
- Candidate accepted the allotment and deposited online fee has to report in the institution on the schedule date along with all original documents and their self-attested copies viz.10<sup>th</sup>,12<sup>th</sup> mark sheets and certificates, PDC/degree of UG & PG and their transcript, domicile certificate, reservation certificate, self-declaration (in case of OBC) certificate, recent income certificate and fee deposition receipt, etc.
- Failing to report on the given date or lacking any document will be treated as not reported candidate and the option form fee will be forfeited. Vacant seat will be filled by other candidate in next counselling. Institution fee (other than option form fee) **will be refund only if the seat is filled.**

### **13.0 ONLINE FINAL COUNSELLING**

- The seats remain vacant after above reporting same will be filled through final online counselling
- Online option form will be invited as per the schedule in **ANNEXURE-IV**
- Candidates who did not get admission or not reported candidates will be eligible for final online option form. Candidates reported in the institutions will not be eligible.
- Online option form for counselling may be filled after paying Rs 5000/- + the bank charges.
- Candidate who did not get seat through previous option form, need not to pay the option form fee again but, have to fill the fresh option form.
- Vacant seats will be filled by the category candidates if available else from the candidates where from the seat get reserve using merit and above option form.
- Candidate has to deposit the fee of allotted college online and report in the college on given date along with all original documents and their self-attested copies.
- Seats of not reported candidates will be filled from remaining candidates filled the option form by the category candidates if available else from the candidates wherefrom the seat get reserve.
- Candidate has to deposit the fee of allotted college online and report in the college on given date along with all original documents and their self-attested copies.
- Candidate has to report in the college on given date. The admission process will be closed with this process even seat remains vacant. The last date of admission process is **25-08-2021.**

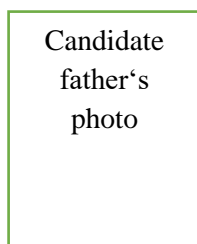
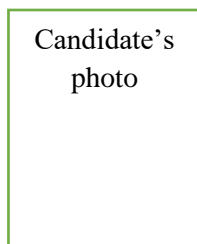
**Candidates are advised to visit the website for changes in dates, system, or any other information from time to time. The coordinator will not be responsible for not reaching the changes to the candidate in time.**

**ANNEXURE –I**  
**CERTIFICATE FOR DEFENCE WARDS/WIDOWS**

This is to certified that Mr./Ms./Widow (Name of candidate).....born on dated.....son/daughter/widow of (Father's/Mother's/Husband's Name) .....worked in the .....(Army/Navy/Airforce). He/She .....belong to defence priority ..... (I/II/III/IV/V/VI/VII/VIII/IX).

- Priority - I** : Widows/Wards of Defence Personnel Killed in Action.  
**Priority- II** : Wards of disabled in action and boarded out from service.  
**Priority-III** : Widows/Wards of Defence Personnel who died while in service with death attributable to military service.  
**Priority-IV** : Wards of disabled in service and boarded out with disability attributable to military service.  
**Priority-V** : Wards of Ex-Servicemen and serving personnel who are in receipt of Gallantry Award: [i. Param Vir Chakra; ii. Ashok Chakra; iii. Maha Vir Chakra; iv. Kirti Chakra; v. Vir Chakra; vi. Shaurya Chakra; vii. Sena, Nau Sena, Vayu Sena Medal; viii. Mention-in-Despatches].  
**Priority-VI** : Wards of Ex-Servicemen.  
**Priority-VII** : Wives of (i. defence personnel disabled in action and boarded out from service; ii. defence personnel disabled in service and boarded out with disability attributable to military service; iii. ex-servicemen and serving personnel who are in receipt of Gallantry Awards).  
**Priority-VIII** : Wards of Serving Personnel.  
**Priority- IX** : Wives of Serving Personnel.

**50% of the reserved seats of defence quota will be earmarked for the girls.**



**Signature of competent Authority with seal**

## अनुलग्नक – I

### सैनिकों के बच्चों/विधवाओं के लिए प्रमाण पत्र

यह प्रमाणित है कि श्री/सुश्री/विधवा (अभ्यर्थी का नाम) .....जन्म तिथि.....  
.....पुत्र/पुत्री/विधवा (सैनिक पिता/माता/पति का नाम) .....ने सेना की  
(थलसेना/नौसेना/वायुसेना).....मे काम किया है। ये सैन्य सेवा के लाभ हेतु प्राथमिकता.....  
... (I/II/III/IV/V/VI/VII/VIII/IX) से संबंधित है।

**प्राथमिकता-I** – युद्ध के दौरान मारे गए सैनिकों की विधवाओं/बच्चे

**प्राथमिकता- II** – युद्ध या सैनिक कार्यवाही के दौरान अपाहिज हो गये एवं जिस कारण सेवा से बाहर कर दिया गया उनके बच्चे

**प्राथमिकता- III** – सेना में रहते हुए मृत्यु हो गई एवं सेवा काल के दौरान सैन्य कारणों से मृत्यु हो गई उनके विधवाओं/बच्चे

**प्राथमिकता- IV** – सेवा काल के दौरान अपाहिज हो गये एवं सैनिक कार्यवाही के दौरान अपाहिज होने के कारण सेवा से बाहर कर दिया गया उनके बच्चे

**प्राथमिकता- V** – पूर्व सैनिकों एवं सेवारत सैनिकों जिन्होंने गैलेंट्री अवार्ड प्राप्त किया उनके बच्चे {i. परम वीर चक्र, ii. अ गोक चक्र, iii. महा वीर चक्र, iv. कीर्ति चक्र, अण्वीर चक्र, vi. भार्य चक्र, vii. सेना, नौ

सेना, वायु सेना मेंडल, viii. उल्लेख-इन-डिस्पैच}

**प्राथमिकता- VI** – पूर्व सैनिकों के बच्चे

**प्राथमिकता- VII** – की पत्नियों {i. युद्ध या सैनिक कार्यवाही के दौरान अपाहिज हो गये एवं जिस कारण सेवा से बाहर कर दिया गया, ii. सेवा काल के दौरान अपाहिज हो गये एवं सैनिक कार्यवाही के दौरान

अपाहिज होने के कारण सेवा से बाहर कर दिया गया, iii. पूर्व सैनिकों एवं सेवारत सैनिकों जिन्होंने गैलेंट्री अवार्ड प्राप्त किया}

**प्राथमिकता- VIII** – सेवारत सैनिकों के बच्चे

**प्राथमिकता- IX** – सेवारत सैनिकों की पत्नियों सैन्य कोटे की आरक्षित 50 प्रतिशत सीटें लड़कियों के लिये चिंहित की गई है।

सैन्य काटे की आरक्षित 50 प्रतिशत सीटें लड़कियों के लिये चिंहित की गई है।

अभ्यर्थी की  
फोटो

अभ्यर्थी के पिता  
की फोटो

सील के साथ सक्षम अधिकारी का हस्ताक्षर

## ANNEXURE-II

### **Broad Outlines of Syllabus for Doctorate Degree Programme- 2021**

#### **SYLLABUS:**

**Objective of such type of Entrance Test is to select the best candidates; therefore, no syllabus can be prescribed, however, a broad outlines are given as follows:**

#### **AGRICULTURE**

##### **01- AGRICULTURAL ECONOMICS**

Basic concepts in economics, theory of consumer demand, theory of production, market classification, theory of perfect and imperfect competition, theory of distribution, national income accounting, classical and Keynesian theories of income determination, money-concepts, functions, theories of demand for money, supply of money; general equilibrium of product and money markets; IS and LM functions; monetary and fiscal policies, banking - central and commercial, functions and problems of recent macroeconomic, policies of Government of India; research methodology, steps in agricultural economics research, data collection, analysis and report writing; simultaneous linear equations, linear programming, statistical inference, correlation and regression analysis, time series analysis and theory of index numbers. Nature and scope of agricultural production economics vis-a-vis farm management; farm business analysis, farm records and farm cost accounting; farm planning and budgeting, production function and resource allocation; assumptions of production function and different form of production functions, cost, profit and supply functions; nature and analysis of risk in farming; systems approach in farming; role of credit in agriculture, principles of agricultural finance, farm financial management, supply and demand for farm credit; recent innovations in the extension of credit to agriculture, theory and practice of cooperation; problems of cooperatives, management of co-operative institutions; cost-benefit analysis of agricultural projects. Scope of marketing in a developing economy; practice and problems of marketing agricultural inputs and outputs; functions and channels of marketing, co-operative marketing; agricultural price analysis; demand analysis; problems and prospects of storage and processing of agricultural products; agricultural exports -problems and prospects. Market intermediaries and their role, marketable & marketed surplus estimation, marketing efficiency, market integration, APMC regulated markets - Direct marketing, contract farming and retailing - Supply chain management, role of information technology, telecommunication in marketing of agricultural commodities. Theory of growth and growth models; agricultural policy, planning and development in India, interregional variations in agricultural development, agricultural technology and income distribution; agrarian reforms and output and input price policies; infrastructure and institutions for agricultural development, equity and ecological consideration in agricultural development. OLS and their properties, multi-collinearity, heteroscedasticity and autocorrelation. Concepts, classification and problems of natural resource economics- Economy Environment interaction, Resource scarcity - Limits to Growth - Measuring and mitigation natural resource scarcity, common property rights, sustainability, environmental pollution.

##### **02- AGRONOMY**

Principles of crop production, crop plants in relation to environment, concepts involved in growth analysis; quantitative agro-biological principles and their validity; classification of climate, agro-climatic zones of India and Rajasthan, their characteristic features; physiological limits of crop yield and variability in relation to the agro-ecological optimum; types of tillage - concepts and practices; resource conservation technology. Weed ecology & physiology; crop-weed interference; methods of weed

control; principles and practices of weed management in crops and cropping systems; herbicide-formulations, classification, selectivity and mode of action; adjuvants; integrated weed management; herbicide resistance, fate of herbicides. Agro-meteorology in relation to crop environment; solar radiation utilization & photosynthesis; air temperature and humidity; monsoon characterization; weather forecasting; climate change: its impact on agriculture, mitigation and adaptation. Introduction, origin, history, production, distribution, cultural practices, varieties, quality, biomass production and bioenergetics of major field crops, forage, spices and condiment crops. Soil fertility and its management; essential plant nutrients, their functions and deficiency symptoms in plants; dynamics of major plant nutrients; organic manures, chemical and biofertilizers and fertilizer uses; integrated plant nutrient management; precision farming & site-specific nutrient management; organic farming: concept, principles & components, quality parameters, labeling, certification & accreditation process. History of irrigated agriculture, soil-water-plant relationship, soil moisture constants and soil water availability to plants, soil moisture stress and plant growth; drought resistance in crops, mechanisms of drought tolerance, and crop adaptability, soil and plant moisture conservation techniques, water harvesting and other agro techniques for dryland agriculture; measurement of soil moisture, methods of scheduling irrigation, methods of irrigation for crop plants, quality of irrigation water; watershed management concepts; management of excess soil water, agricultural drainage, principles and practices; problem soils - saline, alkali, saline-alkali and acid soils, soil erosion and its control. Cropping systems - principles and practices and assessment; changing cropping patterns in different agro-climatic zones; crop diversification, IFS, Sustainability - concept and practices; agro-forestry systems - concepts and practices. Principles of experimental designs, analysis and interpretation of data, methods of statistical analysis and statistical designs.

### **03- ENTOMOLOGY**

Position of insects in animal kingdom - their origin, phylogeny and distribution; history and basis of insect classification; distinguishing characters of insect Orders and economically important families; concept of species and speciation; rules and regulations of zoological nomenclature; morphology - external and internal; embryonic and post-embryonic development. Insect ecology - biotic potential, biotic and abiotic resistance, effect of temperature, humidity and light on insect development and population dynamics; diapause, food chain, migration and dispersal. Life table concept, survivorship curves, degree-day model, predator prey relationship, diversity indices (index). Fundamentals of insect physiology, different systems, their structure and function, metabolism, sense organs, insect behavior, host plant relationship, ecosystems, horticultural crops, host parasite relationship. Social and other beneficial insects; pests of field crops and stored food; principles of pest control; classification, mode of action and metabolism of insecticides; insecticidal residues; resistance and resurgence; parasites, predators and pathogenic microorganisms of crop pests, biological control. Antifeedants, hormones, growth regulators, semio-chemicals, host-plant resistance and genetic manipulation, insect quarantine; concept of integrated pest management; non-insect pests and their control. Principles of experimental designs, analysis and interpretation of data, methods of statistical analysis and statistical designs.

### **04- EXTENSION EDUCATION**

Objectives, philosophy and principles of extension education; extension role of agricultural universities; comparative studies of extension education system in selected developed and developing countries; different models of organizing agricultural extension, particularly tools and methodology; agricultural information (knowledge) system; teaching and learning processes; principles of adult learning; audio visual aids and their classification; modern communication and information technology; application of PERT/CPM, principles of programme planning process; agricultural and rural

development programmes in India, namely CD, Panchayatiraj System, IADP, IRDP, SGSY, PMGSY, DPAP, KVK, ATIC, ATMA, IVLP, ICDS, NREGP, Farmers Field School, Kisan Call Centre. Principles of extension management, different theories of management processes and functions of managerial organizational set-up for extension services in India including the T & V system; types of training programmes for extension personnel and farmers; model of modern training, modern technologies, experimental learning methods, entrepreneurial development process; factors affecting extension training. Participatory extension approaches (RRA, PRA, PLA, AEA, PAR, FPR); Participatory tools and techniques; Participatory technology development and dissemination. Scope and importance of psychology in extension education, concept of human society; characteristics of rural people; socio-psychological basis of human behavior, socio-psychological factors in transfer of technology; social structure; social interactions and processes; values and norms of rural social systems; rural institutions; role of leadership; process of diffusion and adoption; consequences of adoption of innovations; communication process and elements of communication; theories of communication, fundamentals of farm journalism; role of mass media; modern electronic media. Process of scientific research; research designs; data collection devices; validity and reliability of measuring devices; methods of observation and data collection; techniques of tabulation; analysis of data and report writing; methods of statistical analysis; statistical designs.

#### **05- GENETICS AND PLANT BREEDING**

Structure and function of cell and cell organelles, cell cycle; mitosis and meiosis; nucleic acids – their structure; Mendelian principles; gene interaction, multiple alleles, chromosome structure and organization; types of chromosomes; chromosome function; linkage and crossing over - theories and molecular mechanism; recombination and gene mapping in diploids, fungi, bacteria and human; ploidy variations - euploids and aneuploids; chromosomal aberrations; extra chromosomal inheritance; gene mutation-mechanism, induction; gene concept; complementation, genetic code, information transfer and protein synthesis, gene regulation and gene manipulation; gene transfer technology; origin and evolution of important crop plants like wheat, rice, maize, sugarcane, potato, brassica, cotton, etc. Genetic basis of plant breeding; pureline selection; male sterility and incompatibility and their use in plant breeding; principles and methods for self and cross pollinated crops and vegetatively propagated crops; heterosis; plant introduction and exploration and their role in plant breeding; breeding for disease, insect and pest resistance; role of interspecific and intergenic hybridization; combining ability and its relationship with the components of gene action; seed production techniques; PBR, IPR, PPV&FR act 2001, farmers rights: changes in gene frequencies; mutation and its role in breeding; use of biotechnology in plant breeding. Molecular markers and their applications in genetic analysis and plant breeding. Genetic engineering & its tools, QTL and marker assisted selection. Inheritance of quantitative traits, polygenes, continuous variation, components of genetic variation, heritability and genetic advance, GxE interaction stability analysis, geneaction, combining ability & its estimation, parent offspring regression. Principles of experimental designs, analysis and interpretation of data, methods of statistical analysis and statistical designs.

#### **06- HORTICULTURE**

Importance scope, area and production of major horticultural crops. Recent trends in planting systems, cropping systems, improved varieties, canopy management, nutrient management, water management, fertigation, role of bioregulators, biotic and abiotic factors limiting fruit production, physiology of flowering, pollination fruit set and development, physiological disorders, insect pest and diseases, maturity indices, harvesting, grading, packing, storage and ripening techniques of fruit crops – mango, banana, citrus, guava, grapes, pomegranate, papaya, sapota, custard apple, aonla, phalsa, ber,



apple, pear, peach, plum, strawberry, wood apple, bael, litchi. Propagation, tissue culture and nursery management of fruit plants. Biodiversity, germplasm conservation, gene centers, intellectual property rights of fruits crops. Introduction, botany and taxonomy, climatic and soil requirements, commercial varieties/hybrids, sowing/planting times and methods, seed rate and seed treatment, nutritional and irrigation requirements, intercultural operations, weed control, mulching, physiological disorders, harvesting, post-harvest management, plant protection measures of vegetables- tomato, brinjal, chilli, okra, cucurbitaceous vegetables, beans, sweet potato, yam, cole crops, root crops, peas, leafy vegetables, bulb crops. Introduction, importance of spice crops-historical accent, present status - national and international, future prospects, botany and taxonomy, climatic and soil requirements, commercial varieties/hybrids, site selection, sowing/planting times and methods, nutritional and irrigation requirements, pharmaceutical significance, plant protection measures, physiological disorders - black pepper, cardamom, clove, cinnamon and nutmeg, turmeric, ginger and garlic, coriander, fenugreek, cumin, fennel, ajwain, Scope and global scenario of cut flowers in global trade, varietal wealth and diversity, Patent rights, nursery management, influence of environmental parameters, light, temperature, moisture, humidity and CO<sub>2</sub> on growth and flowering. Cut flower standards and grades, harvest indices, Water and nutrient management, fertigation, weed management, rationing, training and pruning, disbudding, special horticultural practices, use of growth regulators, physiological disorders and remedies, IPM and IDM in crop- rose, chrysanthemum, carnation, gerbera, gladioli, tuberose, orchids, anthurium, aster, liliiums, dahlia, gypsophilla. Landscape designs, types of gardens, Styles of garden, Urban landscaping, Landscaping for specific situations, Garden plant components, Lawns, Establishment and maintenance, Bio-aesthetic planning, eco-tourism, theme parks, indoor gardening, therapeutic gardening, non-plant components, water scaping. Cacti, succulents, tree, shrubs, climbers, alpine and annual flower plants in landscaping. Important landscape in India. Maturity indices, harvesting practices for specific market requirements, Physiology and biochemistry of fruit ripening, pre-cooling, Methods of storage ventilated, refrigerated, MAS, CA storage, physical injuries and disorders. Packing methods and transport, principles and methods of preservation, food processing, canning, fruit juices, beverages, pickles, jam, jellies, candies. Dried and dehydrated products, Role of photoperiod, vernalization, dormancy, respiration, transpiration, photosynthesis and senescence in plants. Essential plant nutrients and their uptake in horticultural crops. Principles of experimental designs, analysis and interpretation of data, methods of statistical analysis and statistical designs.

## **07- LIVESTOCK PRODUCTION AND MANAGEMENT**

Advances in housing management of dairy cattle and buffaloes in various agroclimatic zone of India. Management systems for cattle and buffaloes. Establishing Dairy Cattle Enterprise. Breeding Management. Advances in Feeding Management of cattle and buffalo, feeding for milking herd, dry cows, bulls and calves, Management of high yielding animals. Numbers and distribution of milch and dual-purpose breeds of cattle and buffaloes. Sheep production. Advances in feeding management, Nutrient deficiencies in forage, General feeding practices, Feeding materials, Feeding lambs and ewes during lactation. Role of sheep husbandry in agriculture, Present development programmes in sheep and goat production. Role of goat in animal agriculture, Goat farming in India, selection of Breeding stock, Breeding problems, Housing, Principles of feeding, Milking practices. The present and future of Swine production systems in India and production policies adopted in advanced countries. Principal of animal experimentation. Planning and designing of experiments. Integration of research in various disciplines of animal production. Scientific writing research papers, reviews and reports etc. and their presentation. Importance and limitations of rabbits for meat and fur production. Common breeds and strains of poultry. Utilization and disposal of animal waste, Health hazards, Waste utilization, technologies for

processing and treatment of animal wastes. Principles of experimental designs, analysis and interpretation of data, methods of statistical analysis and statistical designs.

### **08- MOLECULAR BIOLOGY AND BIOTECHNOLOGY**

Structure and organization of prokaryotic and eukaryotic cells; Cytoskeletal elements; organization and expression of prokaryotic and eukaryotic genome; concept of gene; quantitative trait loci, mutation; genetic recombination; transformation; transduction; conjugation; structure, function and regulation of genes in prokaryotes and eukaryotes; transcription and translation; recombinant DNA, restriction enzymes, vectors, plasmids, cosmids and bacteriophages, expression vectors, cloning strategies, construction and screening of genomic and cDNA libraries, nucleic acid hybridization and DNA sequencing; restriction fragment length polymorphism; monoclonal antibodies and their application; enzyme engineering; genetic transformation of eukaryotes; crop improvement through genetic engineering; role of tissue culture in crop improvement; microbes in agriculture and industry; structure and function of proteins, nucleic acids, carbohydrates, lipids, enzymes; metabolism, glycolysis, citric acid cycle; respiration, bioenergetics; nucleic acid and protein biosynthesis; photosynthesis, nitrogen fixation. PR in Biotechnology. Biosafety and Bioethics issues. Cell division and regulation of Cell cycle; Membrane transport; Signal transduction; Protein targeting; Molecular marker and its application in Agriculture; Genomics, Proteomics and metabolomics; Properties of nanomaterials and characterization, Synthesis and Application of nanomaterials. Introduction to Bioinformatics and Biological database. BLAST and FASTA.

### **09- NEMATOLOGY**

Nematode and its characteristics, History and development of Nematology in India and abroad, Nematode habitats and diversity - Plant, animal, human parasites and entomo-pathogenic nematodes, Economic importance of nematodes in Agriculture, Extraction of nematodes from soil and plant material, Staining nematodes in plant tissues, Estimation of population densities, Killing, fixing and preservation of nematodes, Preparation of permanent and semi permanent mounts, perineal patterns and vulval cone of nematodes, Isolation and culture techniques of nematodes, Organization of nematode body, Morphology of plant parasitic nematodes - Body Wall, digestive, reproductive, excretory and nervous system, Principles of nematode taxonomy and its importance, Placement of nematodes in Animal Kingdom and comparison with related organisms, Phylum- Nematoda and its classes, Classification and characteristics of important Tylenchid, Aphelenchid and Dorylaimid nematodes. Biology and ecology of nematodes, Patterns of Nematode life cycle, Distribution and dispersal of nematodes. Types of nematode parasitism, Nematode behavior - Hatching, moulting, host finding, feeding and reproduction, Survival strategies of nematodes in adverse environmental conditions, Effect of abiotic and biotic factors on nematodes, Chemical composition of nematodes, hydrolytic enzymes, pseudocoelome and its function, Plant nematode relationships, Cellular responses to infection by important plant parasitic nematodes, Interaction of plant parasitic nematodes with other micro-organisms (Fungi, Bacteria, Viruses etc.), Nature of damage and symptomatology, Nematode diseases of Cereals, Pulses, Oil seed, Vegetables, Fruit, Ornamental, Fiber and Plantation crops, Nematode problems of protected cultivation, Crop loss estimation, ecological and socio-economic aspects, pest risk analysis of important nematodes, Principles and practices of nematode management - Physical, cultural, host resistance, biological, chemical and regulatory methods with their advantage and disadvantages, Integrated nematode management, Nematode management under protected cultivation, Nematode as biological models, Application of molecular techniques in Nematology.

## **10- PLANT PATHOLOGY**

Landmarks and pioneers of plant pathology; theory of microscopy and staining; morphology of fungi, bacteria, rickettsia's, phytoplasma and spiroplasma, viruses and viroids; principles of culturing and preservation of pathogens; characteristic symptoms; host-parasite relationships and its basis; symbiosis; economically important diseases of crop plants induced by fungi, bacteria, rickettsia's, phytoplasma and spiroplasma, viruses and viroids; phanerogamic parasites, non-parasitic diseases; nutrition, growth, reproduction, lifecycle, ultra structure, genetics and classification of microorganisms; Molecular methods for detection and diagnosis of Pathogenic microbes like fungi, bacteria and viruses.; beneficial microorganisms including mycorrhiza; variation in phytopathogens and their ecology; introductory epidemiology. Principle of disease management, disease resistance, plant quarantine, seed and soil health. Disease forecasting. Important statistical designs; methods of their statistical analysis.

## **11- SOIL SCIENCE AND AGRICULTURAL CHEMISTRY**

Rocks and minerals; mineral weathering and soil formation; classification of soils, major soils of India; Soil texture, structure, soil water, soil temperature, soil air and their management, principal silicate structures; nature and properties of organic and inorganic constituents of soils, ion exchange phenomenon; activity of ions in soil system; fixation and release of nutrients. Soil fertility evaluation; movement of water; problematic soils, soil-related constraints in crop production and remedial measures, soil amendments; soil and water conservation; sampling and analytical procedures for soils, plants, water, manures, fertilizers and soil amendments; quality of irrigation water; fertilizer recommendations; soil organic matter, soil micro flora; carbon, nitrogen and phosphorus cycles; biofertilizers; phosphate solubilization; Darcy's law; Ficks law, steady and transient state diffusion in soils. Essential plant nutrients; manures; utilization of organic wastes and industrial by-products; fertilizers and their production, properties and usage; secondary and micronutrients. Microbial transformation of N, P, S, Fe & Mn; land capability classification, chemistry of submerged soil, soil & water pollution, fertilizer control order. Principles of experimental designs, analysis and interpretation of data, methods of statistical analysis and statistical designs

## **HORTICULTURE**

### **01- FRUIT SCIENCE**

Importance scope, area and production of fruits, classification of fruit crops, climatic and soil requirement, Principles of pruning and training, weed control; modern methods of propagation including root stock and micro propagation; Use of growth regulators in fruit crops; water management; use of biofertilizers; High density orcharding. Improvement of plant types of important fruit crops; physiological manipulations for overcoming problems like biennial bearing, spongy tissue, malformation, necrosis and black tip in mango; delayed maturity and uneven ripening in grapes and granulation in citrus. General principles of flower and vegetable production; major methods of preservation and processing of horticultural crops. Cultivation practices of major fruit crops like mango, citrus, banana, grape, papaya, guava, pineapple, loquat, phalsa, jackfruit, mangosteen, sapota, cashew nut, ber, pomegranate, date palm, aonla and temperate fruits like apple, pear, peach, almond, plum, apricot and cherry. Important statistical designs; methods of their statistical analysis.

## **HOME SCIENCE**

### **1. FOOD SCIENCE AND NUTRITION/ FOODS AND NUTRITION**

Overview of macro and micro nutrients- digestion, absorption, metabolism. Basis of requirement, functions, sources, digestion and absorption of carbohydrates, fat, protein; amino acid pool, protein turn over, methods of assessing protein quality. Functions and role of dietary fibre in various physiological disorders. Chemistry, distribution, functions, absorption, transport, metabolism, deficiency manifestations, toxicity of vitamins and minerals. Evaluation of food by subjective and Objective methods. Effect of cooking and other processing on their nutritive value of foods. Physiological changes and nutritional requirements during various stages of life cycle Therapeutic modifications of diet in terms of nutrients, consistency and composition for various disorders and diseases. Modes of feeding. Assessment of the nutritional status at individual, household and institutional level: direct and indirect methods. National nutritional programmes and policies; nutritional surveillance. Food and nutrition security at national and household level.

### **2. HUMAN DEVELOPMENT AND FAMILY STUDIES**

Meaning, types and functions of theory, theoretical perspectives- biological, environmental, interactional and cultural. Life span development; Regulation of developmental processes, Integrated view of development from a life span perspective- recent research trends in human development issues. Gender issues in family involvement and cohesiveness (socialization, family roles, responsibilities and family adjustment). Demographic challenges and family ecology. Multi disciplinary view of children with special needs. Impact of a child with developmental challenges on parents and families, ethical issues in the assessment of human development. Development of test /scale & standardization procedure, Current & emerging issues in early childhood care & education, Guidance and counselling- concept, aims, need, nature and scope of guidance and counselling, Impact of aging on physical, psychological, socio-emotional aspects. Consequences of puberty changes, sexual development, early and late maturation and psychological implications. Objectives and theoretical approaches to parent education programmes. Orientation to the supportive and substitutive services related to the welfare of families. Need and scope of children's literature, Meaning, area and scope of marital and family therapy.

### **3. EXTENSION EDUCATION & COMMUNICATION MANAGEMENT**

Extension efforts after independence -Community Development Programme; Panchayati Raj Institutions; Area and target oriented programme - IAAP, T&V; Special programmes for poor, women and children - IRDP, TRYSEM, DWCRA, JRY, IAY, SGSY, MGNREGA; Extension systems in India ; ICAR research and extension systems- KVK, NATP, IVLP, ATIC, NAIP, AICRP; Support structures and their functions - DRDA, Central Social Welfare Board, State Social Welfare Board, NABARD; National Level Voluntary Agencies - CAPART and KVIC; Extension Approaches to rural development; Communication skills; Concept of development communication; Recent advances in communication- print and electronic, internet, e-mail, fax, mobile, interactive video and teleconferencing, e-Governance; Participatory planning – concept and techniques ( RRA, PRA and PLA); Project management techniques - PERT, CPM, SWOT analysis; Implementation and evaluation of extension programmes; Concept and formation of SHGs; Training for Human Resource Development (HRD) ; Types of training; Experiential Learning Cycle; Participatory training methods- lecturette, interactive demonstration, brain storming, case studies, simulation exercises, role -play, group discussion, small group tasks, games, in-basket exercise, T-group and fish bowl exercise; Models of training process- Simple, Elaborated and Spiral; Designing, management and delivery of training programme ;

Monitoring and evaluation; HRD- concept and techniques; Role of multi media in communication; Process of producing newspaper, magazine and other printed literature (leaflets, brochures, newsletters, bulletins, booklets, posters etc.); Process of producing radio, television and multi media programme; Different programme formats for radio and television; Concept of administration and management, principles and process of extension management-planning, organising, staffing, directing, communicating, coordination, controlling, reporting and budgeting; Organizational climate, behaviour, development; Management by Objective (MBO) Various formats of scientific communication; Editing: concepts and techniques; Corporate communication; corporate goals; corporate policy, strategy and corporate niche, branding; Event management - concept, need and types of events; Process of organizing an event; Planning events- press meets/conferences/ exhibitions, organizing media tours.

#### **4. TEXTILE AND APPAREL DESIGNING**

Chemistry of polymers- Polymerisation, types, degree & characteristics; Structure of textile fibres-general, molecular bonding, length, orientation, and requirements of fibre forming substances, Structure-property relations of the fibres - repeating units, bonds, reactive groups and reactions of cotton, viscose rayon, silk, wool, linen, polyester, acrylic, spandex and minor fibres; action of heat, light, bleach and micro-organisms on different fibres; commercial processes of fibres, standardization and quality control, functions of ISI and other standards. abrasion resistance – flat, flex; Pilling; crease recovery; stiffness; drapability; air permeability; thermal properties; flammability & assessment of other safety aspects in textiles; water permeability – repellency, wicking and dimensional stability; comfort & fabric handle measurement. Shuttle less looms- projectile, rapier, air jet, water jet weaving; multiple-shed loom, automatic controls in modern looms & scope of modern methods of weaving; detailed pre-weaving processes. Complex & fancy structures – leno, crepe, double cloth, honey comb, mock-leno, diaper, diamond, dobby, warp and weft figuring, terry and pile, huck –a-back. Principles of contouring, surplice/off shoulder and halter designs; built-in necklines, cowls and collars. Selection, care and maintenance of different household textiles; floor coverings, rugs and carpets; Types and role of under linings in draperies. Status of textile industry in India - cotton, wool, silk, rayon, jute, handlooms, and knitting industry; Government Textile & Clothing policies.

#### **5. DEPARTMENT OF RESOURCE MANAGEMENT AND CONSUMER SCIENCE**

Management-concept, system approach to management, motivating factors, motivation theories. Functions of management-planning, supervision, controlling, organizing, evaluation. Resources-classification, characteristics, factors affecting availability and use of resources, resource conservation. Time and energy management, work simplification techniques, Mundels classes of change, fatigue and its management. Decision making process. Money management-family income, types, budgeting, household accounts, family savings and investment, tax. Elements of art and principles of design. Colour - dimensions of colour, psychological effects of colour, colour schemes and factors affecting use of colour. Furniture and furnishing – types, selection, care and maintenance. Floor and floor coverings, wall finishes, window and window treatments. Flower arrangement, tools and accessories used. Space planning and design-housing need and importance, principles of space planning, types of house plans, economy in construction. Housing problems in India- rural and urban. Building regulations-norms and standards, zoning, housing for special groups and areas, housing finance. Housing and environment-building materials- impact on environment, green rating systems. Consumer-definition, role, rights and responsibilities, consumer behavior, consumer problems, redressal mechanism, standardization and its marks, quality control, buying aids, consumer legislation, education and empowerment. Consumer protection- consumer organization, cooperatives. Ergonomics – definition, significance, scope, anthropometry, man- machine- environment relationship, factors affecting physiological cost of work,

body mechanics, functional design of work place, time and motion study. Management of natural resources-land, forest, water, air, rain water harvesting, municipal solid waste management, concept of sustainable development, environment and health hazards due to pollution. Entrepreneurship-concept, process, barriers, entrepreneurial motivation, challenges, enterprise setting, project planning and appraisal, enterprise management.

## **FORESTRY**

### **1. SILVICULTURE AND AGROFORESTRY**

Forest ecosystem concept, stand dynamics-forest succession, productivity and vegetation forms and natural/artificial regeneration of tree species. Tree measurements, forest inventory and yield concepts. Forest management, ecosystem management, site quality evaluation, stand density and forest valuation. Forest protection through diseases and pest management. Seed development in tropical, sub-tropical and temperate region, testing and certification.

Soil and water management in Agroforestry including biogeochemical cycling of nutrients. Nutrient and Weed Management and Management of Insect-Pests and Diseases in Nursery and Plantation, various aspects of production, integrated nutrient and irrigation management and ecological factors in raising forest plantations. Plantations of Neem, Casuarina, Poplars, Eucalyptus, Terminalias, Acacias, Pine, Oak, Gmelina, Teak, Sandal, Bamboo, etc.

Modern nursery techniques about types of nursery, vegetative propagation, use of green house, mist chamber and fertilizer use. Scope and advantages of using and raising bio-energy plantations. Concept and objectives of agroforestry, community forestry and social forestry, land use including diagnosis and design methodologies.

Major Agroforestry practices in different agro ecological zones of India- arid and semi arid regions-agroforestry practices for wasteland reclamation. , salt affected soils, wetlands and waterlogged areas. Non-wood forest products based agroforestry. Recent trends in Agroforestry systems research and development. National Agroforestry Policy 2014, National and International organizations in Agroforestry. Climate change risk on farming and forests, in agroforestry systems. Principles of economics and use of economic tools in appraisal of the agroforestry systems.

Interactions between tree and live stock including their management, principles of crops and fodder production in Agroforestry. Fodder from trees/shrubs and their nutritive value,/ propagation techniques. Woody elements in agro-forestry systems, their role in biomass production. Suitability of species for different purposes. Multipurpose trees in agro-forestry systems. Fruits crop and their need and relevance in Agroforestry fruit tree species suitable for various assemblage and then planting plan in different agro climatic situation and Agroforestry systems. Role of nitrogen fixing trees/ shrubs. Choice of species for various agro climatic zones for the production of timber, fodder, fuel wood, fiber, fruits, medicinal and aromatic plants. Generic and specific characters of tree and shrubs for Agroforestry. Generic and specific characters of trees and shrubs for agro-forestry. Importance of rangeland, components of rangeland their characteristics and distribution, major types of rangeland in world and their characteristics, types of grasslands in India. Importance Remote sensing, components of Digital image processing, image analysis and classification, Use of GIS and GPS. Use of GIS software in Forestry. Forest soils and land reclamation, Watershed management practices. Probability distribution, Measurement of central tendency, Standard error and deviation, Correlation and regression, Tests of Significance- large and small sample test, ANOVA, Sampling and experimental designs-CRD, RBD, LSD, SPD and Factorial experiments.

**ANNEXURE-III**  
**Sample OMR Sheet**

**Ph.D. ENTRANCE TEST - 2021**  
**OMR ANSWER SHEET, SIDE-I**  
**(USE PROVIDED BLACK BALL POINT PEN ONLY)**

ROLL NO. (IN FIGURES)

ROLL NO. (IN WORDS)

QUESTION BOOKLET NO.       SUBJECT CODE   FACULTY

**INSTRUCTIONS FOR FILLING SIDE-II OF ANSWER SHEET (OMR)**

**Example for filling side II of Answer Sheet**

ROLL NO.							
1	2	0	8	5	4	7	7
0	0	●	0	0	0	0	0
●	1	1	1	1	1	1	1
2	●	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	●	4	4
5	5	5	5	●	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	●	●
8	8	8	●	8	8	8	8
9	9	9	9	9	9	9	9

Number	Example
1	<input type="text"/> 1
2	<input type="text"/> 2
3	<input type="text"/> 3
4	<input type="text"/> 4
5	<input type="text"/> 5
6	<input type="text"/> 6
7	<input type="text"/> 7
8	<input type="text"/> 8
9	<input type="text"/> 9
0	<input type="text"/> 0

There are 1 to 100 questions of multiple choice darken only one circle out of four option.

Note : Candidates appearing for Ph.D. in Fruit Science should blacken the bubble against Horticulture faculty and rest will blacken bubble for Agriculture faculty.

**Example :**

Q. Jaipur is the capital of ..... ?

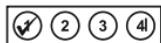
1. Punjab    2. Uttar Pradesh    3. Gujarat    4. Rajasthan    ①    ②    ③    ●

**Instructions for marking answers**

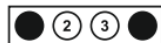
- Use provided black ball point pen only for blackening (shading) the circle on side-II of the answer sheet.
- Blacken the circle completely and uniformly so that the letter / number inside the circle is not visible.
- Blacken only **ONE** circle for each answer as shown in the example below.



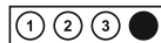
**Wrong**



**Wrong**



**Wrong**



**Correct**

- Blacken/Darken the circle with pen in the space provided. Do not make any stray mark on the Answer sheet or touch pen on any other circle
- Rough work must not be done on the answer sheet. Use your test booklet for doing the rough work.
- Once you darken the circle, you cannot change the answer. Do not use any eraser or whitener.
- For every correct answer four marks will be awarded.
- There will be negative marking (one mark will be deducted for every wrong answer).

ROLL NO. (IN FIGURES)

ROLL NO. (IN WORDS)  ONE  TWO  ZERO  EIGHT  FIVE  FOUR  SEVEN  SEVEN

# Ph.D. ENTRANCE TEST - 2021

## OMR ANSWER SHEET, SIDE-II

ROLL NO.										SUBJECT CODE		FACULTY			
0	1	2	3	4	5	6	7	8	9	□	□	□			
0	1	2	3	4	5	6	7	8	9	1	1				
2	2	2	2	2	2	2	2	2	2	2	2	A	AGRICULTURE		
3	3	3	3	3	3	3	3	3	3	3	3	B	HORTICULTURE (Fruit Science)		
4	4	4	4	4	4	4	4	4	4	4	4			<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px;">SIGNATURE OF CANDIDATE</div> <div style="border: 1px solid black; padding: 5px;">SIGNATURE OF INVIGILATOR</div> </div>	
5	5	5	5	5	5	5	5	5	5	5	5				
6	6	6	6	6	6	6	6	6	6	6	6				
7	7	7	7	7	7	7	7	7	7	7	7				
8	8	8	8	8	8	8	8	8	8	8	8				
9	9	9	9	9	9	9	9	9	9	9	9				
0	0	0	0	0	0	0	0	0	0	0	0				
1	1	1	1	1	1	1	1	1	1	1	1				
2	2	2	2	2	2	2	2	2	2	2	2				
3	3	3	3	3	3	3	3	3	3	3	3				

1	1	2	3	4	26	1	2	3	4	51	1	2	3	4	76	1	2	3	4
2	1	2	3	4	27	1	2	3	4	52	1	2	3	4	77	1	2	3	4
3	1	2	3	4	28	1	2	3	4	53	1	2	3	4	78	1	2	3	4
4	1	2	3	4	29	1	2	3	4	54	1	2	3	4	79	1	2	3	4
5	1	2	3	4	30	1	2	3	4	55	1	2	3	4	80	1	2	3	4
6	1	2	3	4	31	1	2	3	4	56	1	2	3	4	81	1	2	3	4
7	1	2	3	4	32	1	2	3	4	57	1	2	3	4	82	1	2	3	4
8	1	2	3	4	33	1	2	3	4	58	1	2	3	4	83	1	2	3	4
9	1	2	3	4	34	1	2	3	4	59	1	2	3	4	84	1	2	3	4
10	1	2	3	4	35	1	2	3	4	60	1	2	3	4	85	1	2	3	4
11	1	2	3	4	36	1	2	3	4	61	1	2	3	4	86	1	2	3	4
12	1	2	3	4	37	1	2	3	4	62	1	2	3	4	87	1	2	3	4
13	1	2	3	4	38	1	2	3	4	63	1	2	3	4	88	1	2	3	4
14	1	2	3	4	39	1	2	3	4	64	1	2	3	4	89	1	2	3	4
15	1	2	3	4	40	1	2	3	4	65	1	2	3	4	90	1	2	3	4
16	1	2	3	4	41	1	2	3	4	66	1	2	3	4	91	1	2	3	4
17	1	2	3	4	42	1	2	3	4	67	1	2	3	4	92	1	2	3	4
18	1	2	3	4	43	1	2	3	4	68	1	2	3	4	93	1	2	3	4
19	1	2	3	4	44	1	2	3	4	69	1	2	3	4	94	1	2	3	4
20	1	2	3	4	45	1	2	3	4	70	1	2	3	4	95	1	2	3	4
21	1	2	3	4	46	1	2	3	4	71	1	2	3	4	96	1	2	3	4
22	1	2	3	4	47	1	2	3	4	72	1	2	3	4	97	1	2	3	4
23	1	2	3	4	48	1	2	3	4	73	1	2	3	4	98	1	2	3	4
24	1	2	3	4	49	1	2	3	4	74	1	2	3	4	99	1	2	3	4
25	1	2	3	4	50	1	2	3	4	75	1	2	3	4	100	1	2	3	4

Mark of Stamp Should not overlap  
The Answer/Circle

EXAM CENTRE STAMP



## ANNEXURE-IV

### SCHEDULE OF ENTIRE ADMISSION PROCESS THROUGH Ph.D. ENTRANCE-2021

S. No.	Activities	Proposed Date & Day	
1	Issuing Notification	20.03.2021	Saturday
2	Date of commencement for filling the online application	24.03.2021	Wednesday
3	Last date for filling and online depositing the application forms without late fee	17.05.2021	Monday
4	Last date for filling & online depositing the application forms with late fee Rs. 500/-	22.05.2021	Saturday
5	Last date for editing applications form	24.05.2021	Monday
6	Online Admit cards available	05.07.2021	Monday
7	<b>Date of Entrance Examination</b>	<b>11.07.2021</b>	<b>Sunday</b>
8	Display of OMR sheets and answer key	19.07.2021	Monday
9	Last date for objections, if any	22.07.2021	Thursday
10	Declaration of result	30.07.2021	Friday
11	Opening of Online Option Form	30.07.2021	Friday
12	Last date for depositing the Online Option Form fee	05.08.2021	Thursday
13	Last date for editing the Online Option Form	06.08.2021	Friday
14	Display of 1 <sup>st</sup> Provisional Admission List	10.08.2021	Tuesday
15	Last date for accepting allotment and depositing the fee or submitting request for upward assessment (Online)	12.08.2021	Thursday
16	Display of 2 <sup>nd</sup> Provisional Admission List	14.08.2021	Saturday
17	Last date for accepting allotment and depositing the fee or submitting request for 2 <sup>nd</sup> upward assessment (Online)	17.08.2021	Tuesday
18	Display 3 <sup>rd</sup> Provisional Admission List	20.08.2021	Friday
19	Last date for accepting allotment and depositing fee (Online)	23.08.2021	Monday
20	Reporting with original documents in respective College up to 5:00 PM	25.08.2021	Wednesday
<b>If seats remains vacant</b>			
21	Opening of Option Form for Online Spot Counselling		
22	Last date for Online Option Form		
23	Display of 1 <sup>st</sup> Provisional Admission List		
24	Last date for depositing the Online fees		
25	Reporting in the College		
26	Display of 2 <sup>nd</sup> Provisional Admission List		
27	Last date for depositing the online fees		
28	Reporting in the College		

Admission process for 2021-22 will be over by 25<sup>h</sup> August, 2021. Although, JET Coordinator reserves the right to change the dates.

**Candidates are advised to visit the website for changes in dates, system, or any other information from time to time. The coordinator will not be responsible for not reaching the changes to the candidate in time.**

**Contact Details:**

Toll free number: 1800-180-6790

Landline number: 01425-254931

Bank Contact number:01425-254784

Bank email id.: dbjobn@bankofbaroda.co.in

**Coordinator  
JET/Pre-PG/ Ph. D 2021**