



महात्मा ज्योतिबा फुले रुहेलखण्ड विश्वविद्यालय, बरेली

MAHATMA JYOTIBA PHULE ROHILKHAND UNIVERSITY, BAREILLY

पत्रांक : रू0वि0 / शैक्षणिक / 2020 / 688-93

दिनांक: 18.03.2020

सेवा में,

प्राचार्य / प्रबन्धक

चौ० हरनाम सिंह महाविद्यालय,

भरौआ, भुता, बरेली।

विषय— एम0एस0सी0 (कृषि) पशुपालन एवं दुग्ध उद्योग का पाठ्यक्रम उपलब्ध कराये जाने के संबंध में।

महोदय,

उपर्युक्त विषयक अपने पत्रांक 96/2019 दिनांक 09.08.2019 का संदर्भ ग्रहण करने का कष्ट करें। जिसमें आपने उल्लिखित किया है कि महाविद्यालय को विश्वविद्यालय के पत्रांक रू00वि0/सम्बद्धता/2019 7325-30 दिनांक 24.06.2019 के द्वारा परास्नातक स्तर पर सत्र 2019-20 हेतु एम0एस-सी0 (कृषि) पशुपालन एवं दुग्ध उद्योग में नवीन सम्बद्धता प्रदान की गयी है, के क्रम में उक्त विषय का पाठ्यक्रम उपलब्ध कराने का निवेदन किया है।

पशुपालन एवं दुग्ध उद्योग पाठ्यक्रम विश्वविद्यालय परिनियमावली में शामिल होने के फलस्वरूप संबंधित विषय की बोर्ड ऑफ स्टडीज द्वारा तैयार किया गया तथा पाठ्यक्रम कुलपति महोदय द्वारा अनुमोदित भी किया जा चुका है। यह पाठ्यक्रम विश्वविद्यालय की वेबसाइट www.mjpru.ac.in पर अपलोड है।

भवदीया,

/

कुलसचिव

प्रतिलिपि— निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

1. निजी सचिव, कुलपति को कुलपति जी के संज्ञानार्थ।
2. परीक्षा नियंत्रक।
3. सहायक कुलसचिव (सम्बद्धता)
4. प्रशासनिक अधिकारी (गोपनीय/परीक्षा)
5. प्रमारी, अतिगोपनीय/वेबसाइट/केन्द्रीय कम्प्यूटर।


कुलसचिव

महात्मा ज्योतिबा फुले रुहेलखण्ड विश्वविद्यालय बरेली, उ०प्र०

कृषि संकाय

विषय पाठ्यक्रम अध्ययन बोर्ड

पशुपालन एवं दुग्ध उद्योग

सत्र 2019-20

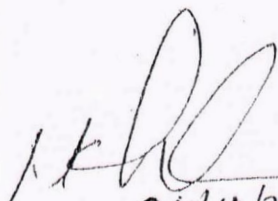
(A) Syllabus
M.Sc. (Ag) A.H. & Dairying

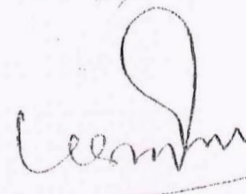
(B) Ordinances.

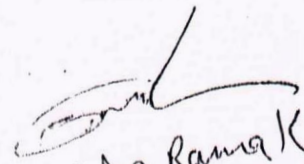
(B) प्रयोगात्मक एवं सैद्धान्तिक परीक्षाओं हेतु परीक्षकों का पैनल - 2019-20

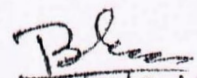
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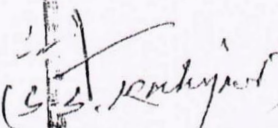
04-11-2019


04/11/2019
(Dr. Narash Kr. Saini)


(Dr. M.P.S. Yadav)


(Dr. Rama Kant)


04/11/2019
(Dr. Bhim Sen)


(Dr. S. K. Singh)

1/2

Faculty of Agriculture
M.J.P. Rohilkhand University, Bareilly UP
M.Sc. (Ag) A.H. & Dairying

ORDINANCES

This course shall be two years course as M.Sc. (Ag) A.H. & Dairying Part – I (Previous) and M.Sc. (Ag) A.H. & Dairying Part – II (Final)

Eligibility – For eligibility to enter upon the M.Sc. (Ag) A.H. & Dairying course a candidate must have passed the B.Sc. (Ag) 4 years (8 semester) degree course examination. viz (10 + 2 + 4).

Examination – There shall be two examination, one at the end of each year. The first being the MSc (Ag) Part – I (Previous) examination and the second M.Sc. (Ag) Part – II (Final) examination. The marks of the both examination (Previous & Final) obtained in aggregate in theory & practical will count together for a place on the pass list of the final examination. Division will be assigned as under on the total aggregate marks obtained at both the examinations (Previous and Final) counted together.

First Division	60%	} of the total aggregate marks in the theory and practical examination.
Second Division	48%	
Third Division	36%	

A candidate is required to pass in written (theory) and the practical examination separately.

In case of thesis preference candidates must submit their thesis to the Registrar well in time. The Thesis shall be examined by a board of two examiners. One external and other and the other internal examiner i.e. the teacher concerned. Each examiner shall award marks as follows –

Thesis (100 Marks) out of 50 Marks

Viva (50 Marks) out of 25 Marks

Their marks will be totaled to determined the candidates marks out of 150 marks.

Every candidate for the M.Sc. (Ag) A.H. & Dairying degree shall be required to pass examination the following courses after their study are as follows.

M.Sc. (Ag) A.H. & Dairying

The courses of study / examination shall be the following –

Previous Year Examination

Total Marks – 350

Theory

Paper No.	Subject Code	Title of Paper	M.M.
Paper – I	AHD	Animal Breeding, Reproduction & Health Management	100
Paper – II	AHD	Live Stock Production & Housing Management	100
Paper – III	AHD	Statistical Methods and Experimental Design.	50
Practical	AHD	Previous	100
			<u>Total 350</u>

M.Sc. (Ag) A.H. & Dairying

Final Year Examination

Total Marks – 450

Theory

Paper No.	Subject Code	Title of Paper	M.M.
Paper – IV	AHD	Animal Nutrition	100
Paper – V	AHD	Dairying Milk Processing	100
Paper – VI (Special Paper)	AHD	Dairying Animal Husbandry	100
OR			
Thesis	AHD	Research works on Animal Science/ Dairy Science	100
Practical	AHD	(Final)–	100
	AHD	Either Practical or (Paper – VI)	50
		(OR)	
	AHD	Viva – voice on thesis	50
			<u>Total 450</u>
Grand Total (Previous & Final)			<u>800</u>

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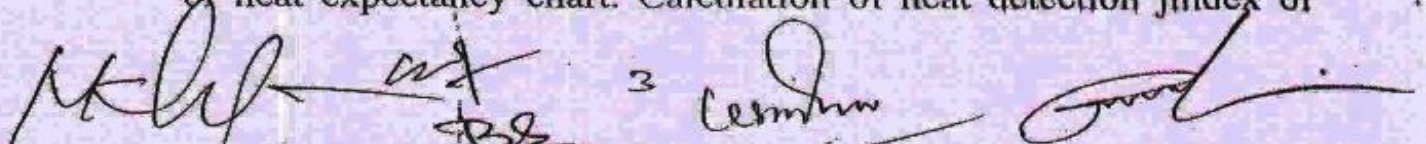
Paper - I Animal Breeding, Reproduction and Health Management

M.M. 100

Unit I Functional morphology of male and female reproductive organs of farm animals. Management strategies for attaining early maturity. Heat detect methods associated problems and their management. Artificial management. Artificial Breeding and its economic importance, post A.I management pregnancy development and diagnosis. Management of down calves postmortem care, factors influencing reproductive efficiency in buffaloes and crossbred cattle and measures for improvement. Management of breeding bulls, method of semen collection, factors affecting quality semen production, evaluation processing and preservation of semen. Merits and demerits of different extenders. Maintenance of records for artificial breeding. Basic principle of inheritance, concept of heritability and repeatability importance, methods of selection and system of breeding in animals. Blood and its composition properties and function.

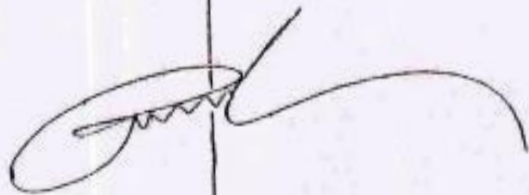
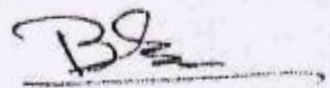
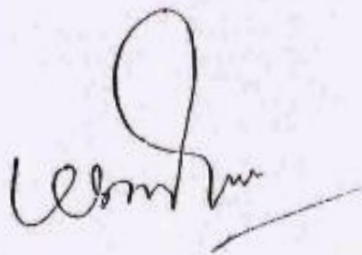
Unit II Health and production interrelationship. General approach to plan animal health programme. Emerging diseases problems in India and their management. Major reproductive disorders their prevention and control Maintenance of herd reproductive health, mastitis, H.S. FMD, B.O. Bloat, milk fever control. Specific disease problems in calves and their management. Sign of disease outbreak and procedure for early diagnosis. Predisposing factors of diseases immune status of neonates. Zoonosis concept and classification. Epidemiology of bacterial and viral diseases.

Practical : Examination of reproductive organs at various stages of reproductive cycle. Heat detection in cattle buffaloes. Preparation of heat expectancy chart. Calculation of heat detection index of



herd. Artificial insemination by rectovaginal and spectrum method. Pregnancy diagnosis by per rectum method. Calculation of breeding efficiency, heritability and repeatability of the herd preparation of bull semen collection. Evaluation of semen, preparation of extendors dilution and preservation of semen, maintenance and handling of liquid semen. Cell count. Cell volume Haemoglobin, Blood sugar and blood serum.

General examination of animals for signs of health. Package of practical for control and prevention of calf diseases, immunization against different diseases. Collection preservation and transportation of clinical material for diagnosis purpose collection preservation and examination of blood and blood smear for protozoa parasites. Examination of urine and faecal material. Preparation and use of insecticide solution. Procedures for autopsy and carcass disposal maintenance of health record. Data base animal health surveillance.



Paper - II Live Stock Production & Housing Management M.M. 100

Unit I Livestock and Poultry development programme currently in operation in country, important breed of sheep, goat, pig and poultry. Their characteristics classification and distribution. Management of sheep, goat, pig and poultry during growth, reproduction and production. Rearing breedable and young stock heifers, their marking for identification, Grazing, docking, dehorning, dubbing, clipping and sterilization. Selection and disposal of culled animals. Different records of management of related animals. Economics of Dairy, Sheep, Goat, Pig and Poultry farming.

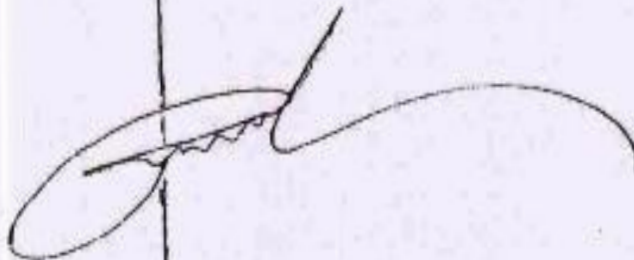
Unit II Principles of construction of farm building selection of site. Types of designs for various livestock and poultry. Space requirements of different categories of livestock and Poultry under different housing systems. Requirements of various housing components viz. ventilation, humidity and temperature control types of floors, walls, gates, roofs, stalls manger stying devices and food storage. Housing for experimental animals, methods of drainage and sewage disposal sewage treatment and classification. Various types of septic and sedimentation tanks digestion tanks, sewage filtration. Sludge and lagoons, recycling of waste and sludge farming and Biogas, common disinfectants, detergents and sanitizers used on farm premises, method of application and factors affecting their efficiency, Construction of auxiliary buildings like bull exercise. Wallowing tank and feed processing unit.

Practical : Preparation of management calendar for sheep, goat, pig and poultry, judging of poultry identification, debeaking, caponization.

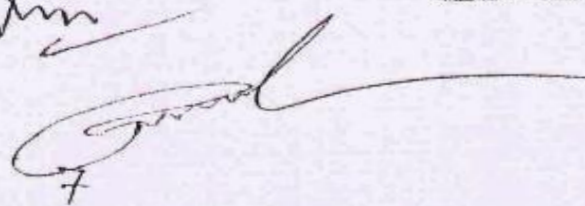
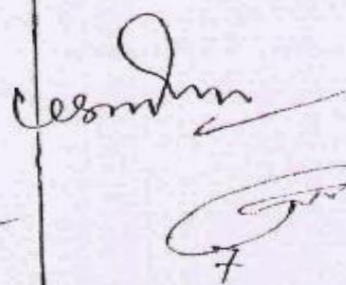
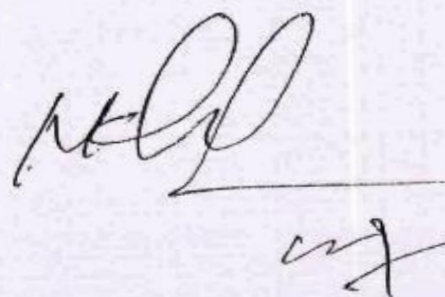
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Maintenance or records at the farm, calculation of cost of meat, egg, wool, hair and milk.

Drawing of environmental profiles in different agro-climatic regions, Layout plans including klffor different size units and catogoreis of animals. Design and construction of different types of shades. Cleaning disinfection of sanitation of diary farm equipment, Layout plans for waster / sewage disposal and sewage plant management.



Paper III	Statistical Methods and Experimental Design	M.M. 50
Unit I	Classification and Tabulation of data, Diagrammatic and Graphical representation of data. Various measures of central tendency and dispersion concept of standard error, test of significance based on Z, 't' and F test.	
Unit II	χ^2 test for testing the significance of goodness of fit and independence of attributes and its various uses in finding the heterogeneity and linkage in genetic and equality of several variances. Analysis of variance. Principles of experimental designs. Planning and analysis of simple experiments, completely randomised designs, randomised block design and Latin square design. Missing plot technique in randomised blocks and Latin square designs (one plot missing). Concept of probability.	
Unit III	Linear regression and correlation : Rank correlation, Partial correlation and regression (up to Three variable only). Basic ideas on sampling, probability sampling, purposive sampling. Statistics of area and yield of crops, Sample surveys and crop cutting experiments.	
Unit IV	Least square techniques, Experimental design for dairy products, poultry breeding. Experimental designs in animal nutrition.	
Unit V	Switch over trials. Sire Indexing Progeny testing.	
Practical :	Practical Problems based on experimentation.	



Paper IV Animal Nutrition

M.M. 100

- Unit I** General : A comparative study of the predication, conventional indicator, tracer and fistula techniques in determining the digestibility of livestock feeds, Schemes for describing the energy and protein Values for feeds and their relative merits. Determination of nutritional requirements. Balance studies, their significance and limitations.
- Unit II** Intermediary metabolism of sugars, fats and proteins, and the final common pathway of energy metabolism and the energy transfer system. Energy, protein and their interaction in livestock production.
- Unit III** Ruminant Nutrition : The rumen, its microflora and fauna. Rumen digestion and metabolism, infantile ruminant nutrition and specific requirement, role of requirements of energy, protein, minerals and vitamins during growth, maintenance, reproduction and production. Nutritional deficiencies and their correction.
- Unit IV** Pig Nutrition : Nutritive role and requirements of energy, protein, amino acids, fat, fibre, vitamins, minerals, antibiotics, surfactants and arsenicals for bacon production. Endocrine stimulants and their role.
- Unit V** Poultry Nutrition : Nutrition, role and requirements of energy, protein, amino acids, fat, fibre, minerals, vitamins for layers and broilers. Animal protein factor, its significance, sources and requirements. Antibiotic and stimulants in poultry feeding.

Practical :

1. Sampling and analysis of animal feeds, faeces and urine.
2. Determination of digestibility of feed constituents.
3. Balance studies with reference to nitrogen, calcium and phosphorus.
4. Comparative nutritional evaluation of dairy, piggery.
5. Calculation of dairy protein & energy requirement of cattle and poultry.
6. Visits to various livestock farms.

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Milk Processing

Paper - V ~~Dairying & Market Milk~~

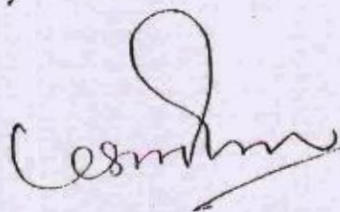
M.M. 100

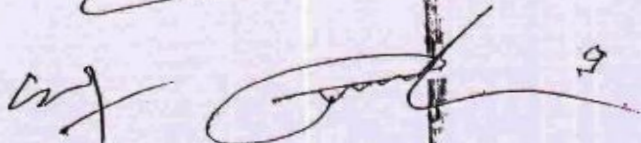
Unit I

Indian Dairy Industry : Status of Dairy Industry in India, Operation Flood Programme Technology mission on dairying. National Milk Grid Marketing Federations, their concepts, achievements limitations and impact on the dairy industry in India. Milk production trends and dairy development through successive national plans. Recent policy changes to dairy sector (MNPO) and their impact on dairy industry in the country. Processing : importance of various milks in milk processing. Impact of processing on major and minor constituents of milk. Methods of milk procurements, payments quality assessment handling and transportation of milk to processing dairies. Milk preservation -- methods of chilling milk Centrifugal separation. Clarification and bactofugation and factors, affecting their efficiency. Automatic desludging separators and clarifiers Homogenization process and its significance in dairy processing. Theories of homogenization and factors affecting it. Thermal processing of milk-principles and methods of thermization, pasteurization and sterilization, Special milk-principles of production processing and marketing of toned, double reconstituted and recombined sterilized, flavoured and filled milk. Manufacturing process of indigenous milk products (Chhana, Paneer, Kheer, Ghee, Dahi) and Cream, Butter, ice-cream & powder.

Practical : Assembling and disassembling of cream and separation of milk.

Study of parts of L.T.L.T. and H.T.S.T. pasteurizers and preparation of reports. Preparation of special milks. ~~Preparation~~ of milk products.



Paper code - AHD
(Optional paper)

$\frac{1}{2}$

Animal

Paper VI

~~Dairy~~ Husbandry

M.M. 100

Unit I

General - Significance of various species of milk - cows, buffaloes, and goats and their characteristics. Important milk breeds of cattle, buffaloes and goats and - Indigenous as well as exotic and the possibilities of improving the existing ones. Livestock development plans and policies of the Government. General herd book, registrations and the review of recent advances in breeding, feeding; and management practices.

Unit II

Breeding - Adoption of various methods of breeding and mating procedures in order to combine economic traits. Selection for more milk. Replacement through purchasers, rearing own animals for milk production.

Unit III

Feeding - Nutrition for different categories of livestock for different purposes. Computation of ideal rations for different classes and categories of dairy stock. Fodder cultivation. Grazing vs. Soiling Fodder conservation practices, planning feeding stock around roughages. Methods and schedule of feeding dairy stock. Exploring the possibilities of utilizing industrial water for livestock feeding

Unit IV

Management - Selection of site for the location of dairy farm. Planning and construction of farm building and the cost and techniques involved. Choices of the species breed and size of the herd.

Management schedules for different classes and categories of dairy stock. Cleaning and sanitation practices. Common ailments, their precautionary and preventive measures and first aid. Maintenance of different dairy farm records of livestock, men and material.

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Unit V Dairy Economics – Economics of dairy farming and the assessment of relative economic of different classes of dairy stock. Essential for successful dairy enterprise. Management of managerial, technical and other staff for the mutual benefit for the farm and the employees.

Practical :

1. The students shall be required to assume managerial duties on the college dairy farm to supervise all the activities and maintain all essential records during the period.
2. The students shall also be required to visit farms and fairs of different sizes in rural and urban areas for studying their activities.
3. Preparations of plans of specialized dairy farms and mixed farms.

