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**SARDAR VALLABH BHAI PATEL UNIVERSITY OF AGRICULTURE  
& TECHNOLOGY MEERUT (U. P.) - 250110**

**PROCEEDINGS OF NINTH MEETING OF ACADEMIC COUNCIL  
HELD AT 11.00 A.M. ON NOVEMBER 01, 2003 IN COMMITTEE ROOM  
OF BIO - CONTROL LABORATORY**

Following were present

- 1 Dr. P.P. Singh, Vice - Chancellor / Chairman
- 2 Dr. H.S. Verma, Registrar / Secretary
- 3 Dr. Kharag Singh Professor (Soil Science) / C.P.O.
- 4 Dr. O.P. Singh Acting Director of Extension
- 5 Dr. I.B. Singh, Acting Director Research
- 6 Shri Om Prakash, SMS (Horticulture)
- 7 Dr. R.R. D. Chaudhary, CTO / Joint Director Extension
- 8 Dr. R.D. Sharma Professor & Officer-in-charge CRS, Bulandshahr
- 9 Er.. Samsher, Professor (Agric. Eng.)
- 10 Dr. B.S. Chaudhary Professor & H.O.D. (Agric. Econ. & Mngt.)
- 11 Dr. S.C. Sirohi Professor & H.O.D. (Horticulture)
- 12 Sri H.K. Sexana, Comptroller

**Agenda I**      **Confirmation of proceeding of VIII<sup>th</sup> meeting held on 25 - 8 - 2003.**

Minutes shall be treated as confirmed if is no objection is raised by any member of Academic Council by 02 - 11 - 2003. Objections may be submitted to the Secretary of the Council by the date.

**Agenda II**      **Decision about considering Training Assistants as "Teachers".**

After detailed discussion amongst the members on the issue of considering Training Assistants as "Teachers" it was decided that the Training Assistants can not be treated at par with "Experimental Scientists" and can not be considered as "Teachers". Mr. H.K. Saxena, Comptroller pointed out that the pay scale of Rs. 1740 - 3000 (unrevised) provided to the Training Assistants can not be raised by the University to Rs. 2200 - 4000 (unrevised) as pay scales can only be altered at Government level. The house agreed on it. It was also discussed and decided that a cadre of non - teaching staff (to which the Training Assistants belong) can not be converted into a cadre of teaching staff. Improvement in academic

qualification by staff candidate/s can also not be made a basis for changing a cadre.

**Agenda III Syllabus for Entrance Test for Admission to B.Tech. (Bio - Technology)**

As the candidates with Intermediate (10+2) or equivalent in Science (Biology/Mathematics/Bio-Math) or Agriculture group have been approved for the admission to B.Tech. (Bio - Tech.) it was agreed after discussion that questions from all these streams shall be included in the Entrance Test.

Their weightage shall be as follows —

General Studies (50), Botany (25), Zoology (25), Chemistry (25), Physics (25), Mathematics (25), Agriculture (25)

The syllabus as given in Annexure I was approved for the Test .

**Agenda IV Admission of staff candidates to various degree programmes for improving their academic qualification**

The following points were discussed and decision were taken regarding with the policy about the admission of staff candidates of the University

Admission of staff candidates shall be made as per their seniority within the Department.

Upto an extent of twenty percent staff members in the department can study at a time under this system.

The staff candidates shall be permitted for admission to M.Sc. / Ph.D. in their Department itself, if the study programme for these degrees exist in the Department. In case, the study programme for M.Sc. / Ph.D. does not exist in the Department, the staff may be permitted for the admission in other Universities / Institutes. However, they shall be encouraged to get admission for M.Sc. / Ph.D. studies in such Institutes where course programme for the degrees studies exist there.

The staff candidates who have been appointed / serving at Out Campuses / Zonal Research Centres / Krishi Vigyan Kendras / Krishi Gyan Kendras of the University and are permitted for admission as staff candidates shall be permitted to reside at the main campus during their study period.

The staff candidates shall be permitted to study under various programmes as Part-time (on full pay) or Full-time (on half pay) basis. However, if a candidate who have been allowed on full - time basis and succeeds to get an scholarship, the amount of the scholarship + pay payable to him shall not exceed more than the amount equal to than his full-pay.

Agenda V      **Permission to the University teachers to teach courses in other Universities / Institutes.**

The issue was deffered for discussion in next meeting of the Council.

Agenda VI      **The following other items as permitted by the Chairman were discussed and decision were taken.**

Some new members for the Academic Council may be nominated out of the new staff members who have been appointed and joined the University. Secretary of the council was given the responsibility to obtain the list of the staff members and propose the names for the membership on seniority basis.

Minutes of a meeting of the Council must be circulated within one week's period after conduct of the meeting.

The members of the Council residing out of the main campus at different Out Stations shall be attached with Heads of respective Departments at Main Campus for technical purpose. They shall also be considered as staff members of the Department. However, administratively they shall be under Head of the Out Station.

The meeting ended with vote of thanks to the Chairman.

*W. Venkatesh*

## Syllabus for Entrance Examination (PBT 2003)

B.Tech. (Bio – Tech.)

GENERAL KNOWLEDGE

No Syllabus is prescribed for General knowledge

## MATHEMATICS

Modern algebra, elements of set theory, Matrices, addition, multiplication, transpose, adjoint of matrix, inverse of matrix (2x2). Group-definition, Abelian group, uniqueness of identity and inverse elements.

Boolean algebra as an algebraic structure simple application to logic. Algebra-solution of simultaneous and quadratic equations.

Arithmetic, geometric and harmonic progression, Binomial theorem for any index, logarithms, exponential and logarithms series.

Probability-definition, dependent and independent event, numerical problems on addition and multiplication theorems of probability.

Trigonometry-simple identities, Trigonometric equation, Properties of triangles, Use of mathematical tools. Solution of triangles, heights and distances, inverse functions.

Coordinate geometry-elementary coordinate geometry of straight lines, Pair of straight lines circle, parabola (in cartesian coordinates only). Calculus-differentiation simple cases, functions of function, tangents and normals, simple maxima and minima. Integration of simple functions by parts, by substitution and by partial function.

Vector-Position vector, addition and subtraction of vectors, scalar and vector products.

Dynamics-velocity, composition of velocity, relative velocity, acceleration, composition of acceleration, motion under gravity projectiles, laws of motion, Principles of conservation of momentum and energy. Direct impact or smooth bodies.

Statics-composition of co-planar concurrent and parallel forces, moments and couple, resultant of set of coplanar forces and conditions of equilibrium, determination of centroids in simple cases and simple problems involving friction.

## PHYSICS

Simple measurements: Vernier's screw and micro-meter scales; composition and resolution of forces: parallelogram and forces; couples; movement of forces; equilibrium of forces.

Velocity and acceleration, momentum, law of motion under gravity, acceleration due to gravity, circular motion, centrifugal and centripetal forces, fluid's pressure, surface tension, capillarity, atmospheric pressure, barometer, Boyle's law.

Laws of friction, simple machines such as levers and pulleys; pumps, work force and energy, heat, conduction and radiation, specific heat, thermal conductivity, latent heat, relation between work and heat, dew point, relative humidity and its control, clouds, fog, frost, snow, etc.

Law of propagation of light, reflection from plane curve surfaces, lenses; microscope, infrared; ultraviolet, visible radiation.

Primary and storage cells, current, voltage and resistance, electrical power, conservation of electrical power into mechanical power, measurements of electrical quantities, uses of electricity.

## BOTANY

- 1 External Morphology of plants-stem, root, leaf-their function and modifications.
- 2 Structure of the flower and functions of its various parts, types of inflorescence.
- 3 Pollination: Elementary study of pollination, types and mechanism.
- 4 Structure and germination of seeds (germination of monocot and dicot seeds), types of seeds, their functions and dispersal.

- 5 Types of fruits, their functions and dispersal.
- 6 Anatomy, structure of plant cell, cell organelles, cell division, organization of cells into tissues, functions of various tissues, Anatomy of monocot and dicot root stem and leaf (secondary growth in dicot stem and root) Study of reproductive organs of angiosperm plants.
- 7 Study of plant physiology (elementary study only).
- 8 (a) Water uptake by plants, structure of root hair.  
 (b) Transpiration, Root pressure, its functions and importance.  
 (c) Carbon assimilation-Structure and function of stomata, factors affecting carbon assimilation.  
 (d) Translocation and storage of food materials.  
 (e) Types and functions of respiration.
- 9 Plant taxonomy and elementary introduction as far as possible from study of common plants of local gardens (study of their characters), Graminea, cruciferae leguminosea, cucurbitaceae, solanaceae, malvaceae.
- 10 Elementary study of following plants:  
 (a) Moss (b) Fern (c) Mucor (d) Bacteria

### ZOOLOGY

- 1 (a) Characteristic features of protoplasm, structure of animal cell, differences between living and non-livings.  
 (b) Study of life forms like amoeba and paramecium.
- 2 Study of morphology, nature and the life history of the following:  
 (a) Invertebrate - tapeworm, earthworm, cockroaches, silkworm, bee and termite.  
 (b) Vertebrate - frog, pigeon (or any other bird), squirrel (or any other mammal).
- 3 Anatomy of the following : cockroach, frog and a mammal.
- 4 (a) Elementary knowledge of the histology of the stomach, lung and kidneys in mammals.  
 (b) Elementary knowledge of digestion, respiration and excretion processes.
- 5 Elementary classification of specialized knowledge about animals listed under item 2.

### CHEMISTRY

- Solid, liquid and chemical transformation.  
 Elements, mixture and compounds.  
 Laws of chemical combinations of mass, constant proportion, multiple proportion, reciprocal proportion, gases modern concept of above mentioned laws.  
 Atomic theory of modern and old concept.  
 Definition explanation and relationship between valency atomic weight, molecular weight and equivalent weight.  
 Structure of atom.  
 Avogadro's law and its uses.  
 Ionization - principle, difference between ion and atom, electrolysis acid base & salts, hydrolysis and neutralization.  
 Oxidation and reduction.  
 Classification of elements.

Water: Temporary & permanent hardness, methods of removal of hardness and use of water in irrigation.

Special mention of properties, use of following elements and their compounds.  
 Study of - nitrogen, ammonia, nitric acid, carbon dioxide, phosphorus, phosphoric acid, sulphur dioxide, sulphuric acid, chlorine, hydrochloric acid.  
 Sources, properties, uses and function in the plants of the following :-

Sodium, sodium chloride, sodium hydroxide, sodium carbonate, sodium phosphate and sodium nitrate, potassium, potassium nitrate, potassium sulphate, calcium, calcium oxide, calcium carbonate, calcium sulphate, calcium phosphate, nitrate, iron, iron sulphate and iron phosphate, aluminium, aluminium sulphate and aluminium phosphate.

Definition of organic compounds and importance, structure of organic molecules and sources, physical properties, classification and nomenclature

General knowledge of the following compounds:

Simple methods for general formula, general properties and important uses. Structural formula (except petroleum oil and fat, carbohydrate and protein).

Hydrocarbon-Saturated and unsaturated.

Alcohol-ethyl alcohol and glycerol.

Aldehyde and ketone-Formaldehyde, acetaldehyde and acetone.

Amines and oxide-Methyl and ethyl amine, urea.

Acids-Acetic acid, butyric lactic and oxalic acid. Oil and fat, soap and saponification.

Carbohydrate-glucose, fructose and sucrose, starch.

Benzene and phenol - general method of preparation and properties.

### AGRICULTURE

Cultivation of common crops-wheat, paddy, cotton, jowar, bajra, maize, soybean, arhar, mustard, sunflower, pea, groundnut, gram, tobacco, potato and sugarcane under the following heads:

Recommended varieties and their main characteristics, suitable areas, seed rate, time and method of sowing, irrigation, fertilizer use, controls of weeds, insect-pests and diseases, harvesting, processing and yield.

Soils-origin and classification loam, silt, clay, sandy loam, etc.: physical and chemical properties: soil conservation. Use of fertilizers, essential nutrients-nitrogen, phosphorus and potassium uptake by different crops, organic and inorganic fertilizers and their effects on crops and soil, methods of using fertilizers, farmyard manure, composting, green manuring, study of organic and inorganic fertilizers manures. Pollution of soil, water and air in modern agriculture and remedial measures.

Irrigation and Drainage - water requirement of crops, measurement of water discharge, prevention of loss of water, quality of water; different methods of irrigation - flooding, basin method, border strip method, sprinkler and drip irrigation - their advantages and limitations. Necessity for drainage, damage to soil and crops due to excess moisture, prevention of formation of acidic and alkaline soils and their management; natural calamities-floods and drought and their management.

Study of following horticulture crops including recommended varieties and their main features, suitability for different regions, time and method of sowing, fertilizer use, irrigation, diseases and pests and their control.

Crops - Cabbage, cauliflower, onion, cucurbits, bittergourd, bottlegourd, muskmelon, squash, ridgegourd; root crops-carrot, radish sweet potato, turnip; peas, tomato, brinjal, lady's finger, spices; fruit crops such as banana, apple, mango, litchi, citrus, guava, papaya, peach etc.

Type of iron and steel, wood, plastic and tin used in agricultural implements and their forms & properties. Study of different types of ploughs-their merits and demerits; mechanical devices such as cultivator, harrow, sprayer, seed drill, threshers etc. their management & cost, selection of prime movers, water lifting devices; discharge.

command area, cost of different system; soil preparation, methods of ploughing, need for tillage, kinds of tillage, interculture, equipment for interculture.  
Power transmission through belts, pulleys and gears, questions relating to number of teeth in gears according to speed and size of pulleys. hand operated chaff cutters, cane crusher etc., draught and its measurement.

Introductory agricultural economics – meaning and scope, significance of agricultural economics in national planning. Production – meaning, factors of production such as land, labour, capital and management, properties of factor of production; law of returns; intensive and extensive agriculture; Exchange- meaning, types, advantages; types of markets, general price determination; money and credit; banks and their functions; principle of international trade. Distribution – meaning, rent, wages, interest and profit; Consumption – meaning, wants and their properties, law of diminishing marginal utility, law of demand, relative prices and standard of living; Cooperation – meaning, principles of cooperation, types of cooperative societies in agriculture, single purpose and multi-purpose cooperative societies, land development banks; Agriculture – place in Five Year Plans; statistics of agricultural production in the State; Major programmes of agricultural development.

Study of major breeds of cows, buffaloes, goat, sheep and poultry: elementary physiology and anatomy of cows and bullocks; estimate of their age: characteristics of good milch cows and buffaloes bulls and bullocks.  
Care and management of pregnant cow, during calving, newborn calves, young calves, mulch cows; poultry management.  
Principles of feeding of various classes of livestock and poultry, Economic feeds for various classes of livestock and poultry. Clean milk production and maintenance of hygiene.  
Common medicines and vaccines used in treatment prevention of animal diseases: handling of animals for treatment; castration.