

23

FEDERAL PUBLIC SERVICE COMMISSION

COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS
IN BPS-17 UNDER THE FEDERAL GOVERNMENT, 2001.

AGRICULTURE

TIME ALLOWED: THREE HOURS

MAXIMUM MARKS: 100

NOTE: Attempt FIVE questions in all, including question No.8 which is COMPULSORY. All questions carry EQUAL marks.

1. Pakistan has experienced a good production of various agricultural crops like Wheat, Rice and Cotton in the recent past, but despite of this the farmers were generally not happy. What do you think could be the reasons of farmers' frustration? Suggest possible solution of such situation.
2. Genetic Engineering and Biotechnology are considered to be the sciences of 21st century. What is the current status of their role in agricultural research in Pakistan and what could be their possible contribution in future in this context. Comment.
3. What is biological Nitrogen fixation? Explain the factors affecting the biological N-fixation.
4. What are the basic laws of inheritance? Comment how these laws have helped in the process of crop improvement in agriculture.
5. Describe the principles of Insect Pest Control in agricultural crops.
6. Horticultural industry is an emerging industry in Pakistan; how do you comment on it?
7. Write short notes on the following:
 - (a) Population Problems of rural Pakistan
 - (b) Role of Organic matter in Soil
 - (c) Soil Erosion and Conservation
 - (d) Live stock as a component of agriculture.

COMPULSORY QUESTION

8. Write only the correct answer in the Answer Book. Do not reproduce the question.
 - (A)
 - (1) The economy of Pakistan is based on:
(a) Agriculture (b) Industry (c) Mineral resources (d) None of these.
 - (2) Which one of the following is major export commodity of Pakistan:
(a) Wheat (b) Cotton (c) Sugar (d) Rice (e) None of these.
 - (3) Sahiwal breed is a breed of:
(a) Buffalo (b) Cow (c) Sheep
(d) Goat (e) None of these
 - (4) Vertebrate pests of crops include:
(a) Insects (b) wild bores (c) spiders
(d) None of these

AGRICULTURE

- (5) Basmati is a type of:
(a) Wheat (b) Rice (c) Maize
(d) Sorghum (e) None of these
- (6) Sericulture means:
(a) Rearing of Honey bees (b) rearing of Silk worms
(c) Both of these (d) None of these
- (7) Gossypium hirsutum is the botanical name of:
(a) Sugarcane (b) Wheat (c) American Cotton
(d) Maize (e) None of these
- (8) Kharif crops include:
(a) Wheat (b) Cotton (c) Both of these
(d) None of these
- (9) Genetically Modified Organisms(GMO) is the term used for the organisms produced through the application of:
(a) Genetic Engineering (b) Mendelian Genetics
(c) None of these
- (10) The carrier of "cotton leaf curl virus" in Pakistan is considered to be:
(a) White fly (b) Jassids (c) American boll worm
(d) None of these
- (11) The process of synthesizing food by the plants in the presence of sun light is called as:
(a) Respiration (b) Photosynthesis (c) Fertilization
(d) None of these

(B) Fill in the blanks.

- (12) The date palm is monocotyledonous plant and belongs to family.....
(13) Nitrogen is taken up by the plants in the form of.....
(14) RGR stands for.....
(15) Increased Vigour of a hybrid over the mean of its parents is called as.....
(16) GDP stands for.....
(17) Haploid number of Chromosomes of Desi Cotton is
(18) refers to the size distribution of soil particles.
(19)refers to the arrangement of soil particles.
(20) IPM stands for.....

FEDERAL PUBLIC SERVICE COMMISSION

COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS IN PBS-17, UNDER THE FEDERAL GOVERNMENT, 2002

AGRICULTURE

TIME ALLOWED: THREE HOURS MAXIMUM MARKS: 100

NOTE: Attempt FIVE questions in all, including QUESTION NO. 8 which is COMPULSORY. All questions carry EQUAL marks.

- 1. In terms of research and newer technologies in current and future agriculture in Pakistan, how do you comment on the statement? "The basic texture of research consists of dreams into which the threads of reasoning, measurements and calculations are woven".
2. What are the functions of water in soil and plants? How water stress affect the plant growth and development?
3. Define growth. Enlist and briefly describe the factors affecting it.
4. Briefly discuss the major problems and possible solutions for increasing productivity of horticultural crops.
5. Discuss methods of pest control and pathogen effect on plant physiological functions.
6. Write short notes on any FOUR of the followings:
(a) Soil texture and structure and their management.
(b) Application of genetics for improvement of crops.
(c) Conducting tissues of carbohydrates, water and minerals
(d) Photoperiodic and thermo periodic responses of crop plants.
(e) Components of agriculture integrated system.
(f) Role of agriculture in the national economy.
7. Differentiate between the followings:
(a) Genotype and phenotype.
(b) Transpiration and Evapotranspiration.
(c) Alley cropping and strip planting.
(d) Determinate and Indeterminate plant species.
(e) Photosynthesis and phototropism.

COMPULSORY QUESTION

- 8. Give only appropriate response in the answer book. Do not reproduce the question.
(A) Choose the correct option from the given choices.

Table with 2 main questions and multiple choice options. Question 1 asks about the number of main cropping seasons in Pakistan. Question 2 asks about the number of land capability classes identified by the soil survey of Pakistan.

AGRICULTURE

3	Highest nutrient concentration causes a phenomenon in plant growth known as:	
	(a) Adequacy	(b) Deficiency
	(c) Toxicity	(d) None of these.
4	KATJA is cultivar of:	
	(a) Banana	(b) Mango
	(c) Citrus	(d) Apple
	(e) None of these.	
5	Pome fruits include:	
	(a) Apple	(b) Pear
	(c) Quince	(d) All of these.
	(e) None of (a), (b) and (c)	
6	Zizypos jujuba is the botanical name of:	
	(a) Berseem	(b) Maize
	(c) Rice	(d) Wheat
	(e) None of these.	
7	Osmite is a chemical used for control of:	
	(a) Virus	(b) Bacteria
	(c) Fungus	(d) Mite
	(e) None of these.	
8	Wheat is placed in:	
	(a) Legumes	(b) Cereals
	(c) Fiber	(d) All of these.
	(e) None of the (a), (b) and (c).	
9	Nili is a breed of:	
	(a) Cow	(b) Buffalo
	(c) Goat	(d) None of these.
10	Essential elements required for plant growth are:	
	(a) 10	(b) 12
	(c) 14	(d) 16
	(e) None of these.	

(B) Fill in the blanks:

11	The science of fruit production is called
12	<i>Scirplothrips citri</i> is a pest attacking
13	Rearing of silk worm is known as
14	<i>Mangifera indica</i> is the botanical name of
15	NAR stands for
16	Copying of m RNA into protein is termed as
17	IBPGR stands for
18	Unit of the material of inheritance is known as
19	IUCN stands for
20	IFAD stands for

FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS
IN PBS-17, UNDER THE FEDERAL GOVERNMENT, 2003

AGRICULTURE

TIME ALLOWED: THREE HOURS MAXIMUM MARKS: 100

NOTE: Attempt FIVE questions in all, including Question No. 8 which is COMPULSORY. All questions carry EQUAL marks. Write clearly.

1. Discuss the role of soil in relation to crop production? What is the significance of different phases of soil in plant nutrition?
2. Discuss biotic stresses affecting crop production and discuss perspective of integrated pest Management with special reference to Pakistan.
3. Importance of Agriculture in economy ^{of Pakistan} crop production can't be underestimated. How do you comment on the statement?
4. What are prerequisites for successful plant propagation? Discuss different modes of reproduction and factors influencing success in vegetable propagation?
5. Discuss measures to bridge the gaps persisting between national average yield of major crops and their potential yield?
6. Write short notes on any FOUR of the following:
 - (a) Photoperiodism
 - (b) Alliloparasitism
 - (c) Integrated plant nutrient system (IPNS).
 - (d) Impact of WTO on agriculture in developing countries.
 - (e) Role of Biofertilizers in Agriculture
 - (f) Role of Statistics in Agriculture research.
7. Differentiate between the following:
 - (a) Respiration and photorespiration
 - (b) Soil texture & soil structure
 - (c) Tissue culture & Mutation breeding
 - (d) Apoplasmic & Symplasmic ion movement
 - (e) Thin layer chromatography vs. Gas chromatography

COMPULSORY QUESTION

8. Write only the correct answer in the Answer Book. Do not reproduce the question.
 - (1) Texture of soil is:

(a) Arrangement of soil particles	(b) Wheat
(b) Relative proportion of soil particles	(c) None of these
(c) Both of the above	
(d) None of these	
 - (2) Inqlab-91 is a cultivar of:

(a) Brassica	(b) Wheat
(c) Rice	(d) None of these
 - (3) Cotton is placed:

(a) Cereals	(b) Legumes
(c) Fiber	(d) None of these

AGRICULTURE

- (4) NMR stands for:
(a) Non Molecular Resistance (b) Nuclear Magnetic Resonance
(c) Nuclear Membrane resistance (d) None of these
- (5) Water stress is:
(a) Shortage of water (b) Water logging
(c) Both a & b (d) None of these
- (6) Free living animal that attacks and feed on other organisms is:
(a) Predator (b) Parasite
(c) Scavengers (d) None of these
- (7) A decrease in the governmentally define value of currency:
(a) Inflation (b) Cheapness
(c) Devaluation (d) None of these
- (8) Seed cotton means:
(a) Seed with lint (b) Seed without lint
(c) Lint (d) None of these.
- (9) Sex nucleus that fuses with another in sexual reproduction is:
(a) Cell (b) Gamete
(c) Spore (d) None of these.
- (10) Motile spores are:
(a) Aplanospores (b) Chlamyospores
(c) Conidia (d) None of these

(B) Fill in the blanks:

- (11) The science of vegetable production is called-----
- (12) The actual amount of water present in air is called-----
- (13) Rearing of honeybees is called-----
- (14) The treatment given to counteract the effect of poison is called-----
- (15) The artificial removal of the stamens from flower before they dehisce is called-----
- (16) Plants which drop their leaves during winter are called-----
- (17) An individual with both male & female genitalia is called-----
- (18) TLC stands for -----
- (19) Arid Agriculture means-----
- (20) Botanical name of wheat is-----

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FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS
IN BPS-17, UNDER THE FEDERAL GOVERNMENT, 2004

AGRICULTURE

TIME ALLOWED: THREE HOURS

MAXIMUM MARKS: 100

NOTE: Attempt **FIVE** questions in all, including **Question No. 8** which is **COMPULSORY**.
All questions carry **EQUAL** marks.

1. Improvement in price control mechanism of agricultural commodities and their marketing system can break the stagnation in agriculture sector. Identify the main bottlenecks and suggest the appropriate strategies to overcome the shortfalls of the existing systems.
2. Have Genetic Engineering and Biotechnology made any break through in crop production so far? Elaborate the scope of modern techniques in enhancing the agricultural productivity within shortest possible time.
3. Huge import bill of edible oil is a big burden on the national economy for the last quarter century. What necessary measures would you suggest to boost oilseed crop production and to avert this serious crisis?
4. Describe various components of IPM Technology and discuss the usefulness of this approach with reference to fore coming WTO regime.
5. Horticultural crops have not been properly exploited according to their potential. How these can play better role than the major crops in agriculture of the country?
6. Write short notes on any **FIVE** of the following:

(a) Crop water use efficiency.	(b) Live stock as a component of agriculture
(c) Hybrid vigour	(d) Alliloparasitism
(e) Genetic Diversity	(f) Foot and Mouth disease
(g) Gram blight and gram wilt.	
7. Differentiate between the followings (**Any Five**).

(a) Macro nutrients and micro nutrients	(b) Basic seed and Certified seed
(c) Pathogenesis and Parthenogenesis	(d) Pomes and stone fruits
(e) C ₃ and C ₄ plants	(f) Saline soils and sodic soils
(g) Vertical and Horizontal resistance	

COMPULSORY QUESTION

8. Write only the correct answer in the Answer Book. Do not reproduce the question.
 - (1) Olericulture is the study dealing with:

(a) Vegetable production	(b) Honey bee
(c) Ornamental Flowers	(d) None of these
 - (2) Colostrum is:

(a) Low nutritive milk
(b) First product of mammary glands after parturition
(c) Product of mammary glands after two months of Parturition
(d) None of these
 - (3) Banana fruit is classified in the category:

(a) Drupe	(b) Pomes	(c) Berry	(d) None of these
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 - (4) Older the rice:

(a) Worse in quality	(b) damaged in shape
(c) Cheaper in price	(d) None of these
 - (5) *Gossypium hirsutum* is the botanical name of:

(a) American Cotton	(b) Desi Cotton	(c) Barley
(d) Sugar Cane	(e) None of these	

AGRICULTURE:

- (6) Selection of plants on the basis of phenotypic superiority is known as:
(a) Hybrid (b) Mass Selection (c) Inbred Line
(d) Pure Line (e) None of these
- (7) Agriculture Extension relates to:
(a) Modernization of agricultural machinery
(b) Financial help to the farmers
(c) Educating farmers
(d) None of these
- (8) When soil surface is protected with residue of a crop, the practice is called:
(a) Nitrogen fixation (b) Sheet erosion (c) Tillage
(d) Mulching (e) None of these
- (9) Bhagnari is a breed of:
(a) Buffalo (b) Cow (c) Sheep
(d) Poultry (e) None of these
- (10) Afforestation means:
(a) Forest Research Station (b) To convert land into forest
(c) Utilization of forest products (d) None of these
- (11) Population genetics is based on:
(a) Principles of Population Control
(b) Mendel's Laws
(c) Hardy Wienberg's law
(d) Genotype-environment inter action
(e) None of these
- (12) Inqalab 91 is a variety of:
(a) Rice (b) Cotton (c) Sugar Cane
(d) Wheat (e) None of these
- (13) Crops produced in hilly areas are low in:
(a) Iron (b) Zinc (c) Nitrogen
(d) Iudine (e) None of these
- (14) Crossing over occurs between:
(a) Sister Chromatids (b) Homologous Chromosomes
(c) Non-Romologous Chromosomes (d) None of these
- (15) Gypsum is rich source of:
(a) Calcium + Zinc (b) Potassium + Nitrogen
(c) Calcium + Sulpher (d) None of these
- (16) F.A.O. has its headquarters in:
(a) London (b) New York
(c) Geneva (d) None of these
- (17) Organic matter in soil helps in:
(a) Improving soil structure
(b) Improving soil texture
(c) Weed Control
(d) Building up of organic compounds in crops
(e) None of these
- (18) Seed cotton means:
(a) Seed without lint (b) Seed with lint
(c) Lint only (d) None of these
- (19) The ploidy level of American Cotton is:
(a) Diploid (b) Triploid (c) Tetraploid
(d) None of these
- (20) Contribution of Agriculture to GDP is:
(a) 35 % (b) 50% (c) 75% (d) None of these

FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS
IN BPS-17, UNDER THE FEDERAL GOVERNMENT, 2005

AGRICULTURE

TIME ALLOWED: THREE HOURS **MAXIMUM MARKS: 100**

NOTE: Attempt FIVE questions in all, including QUESTION NO.8, which is **COMPULSORY**. All questions carry **EQUAL** marks.

1. What are critical issues in agriculture? Write down their solutions for agricultural development in Pakistan.
2. What are Soil texture and soil structure? How the soil texture and structure affects the plant growth. Discuss in detail.
3. How genetic manipulation of field crops can improve the tolerance of the plants to a biotic stress?
4. How research can play role in achieving food security? Discuss in detail.
5. What are different economic decision levels in IPM? Describe the role of IPM in sustainable agriculture.
6. Write Short notes on any Five of the following:-
 - (a) Role of organic matter in soil productivity.
 - (b) Wind erosion.
 - (c) Challenges in animal production in Pakistan.
 - (d) Major diseases of wheat crop in Pakistan.
 - (e) Principles of crop management.
 - (f) Modern concept of horticultural industry.
 - (g) Photoperiodism.
7. Differentiate between the following (Any five):-

(a) Epigeal germination and Hypogial germination	(b) Synapsis and Synopsis
(c) Eluviation and Illuviation	(d) Metastasis and Myasis
(e) True fruits and False fruits.	
(f) Oviparous Insects and Viviparous Insects.	
(g) HPLC and TLC.	

COMPULSORY QUESTION

8. Write only the correct answer in the Answer Book. Do not reproduce the question.
 - (1) How much of the earth surface is covered by water:

(a) 65%	(b) 70%
(c) 80%	(d) None of these
 - (2) Citrus has its origin in:

(a) Indo-Chinese region	(b) Africa
(c) Middle East	(d) None of these
 - (3) The science of classification is called:

(a) Ecology	(b) Horticulture
(c) Taxonomy	(d) None of these
 - (4) Grapes cultivation is called:

(a) Orcharding	(b) Viticulture
(c) Pomology	(d) None of these
 - (5) Tomato is a good source of vitamin:

(a) Vitamin A	(b) Vitamin B
(c) Vitamin C	(d) All of the above

AGRICULTURE

- (6) Histosols are found in:
(a) Canada (b) Alaska
(c) Both (a) and (b) (d) None of these
- (7) Age of earth is:
(a) 6 billion years (b) 4 billion years
(c) 1 billion years (d) None of these
- (8) Common soils found in Pakistan:
(a) Aridisols (b) Inceptisols
(c) Both (a) and (b) (d) None of these
- (9) A group of similar looking plants that has approved for general cultivation in a ecological zone is called:
(a) Variety (b) Strain
(c) Taxonomy (d) None of these
- (10) The basic set of chromosomes in case of wheat is:
(a) 7 (b) 14
(c) 42 (d) None of these
- (11) In DNA, adenine always pair with:
(a) Thymine (b) Guanine
(c) Cytosine (d) None of these
- (12) Mushrooms are member of:
(a) Omycetes (b) Discomycetes
(c) Pyrenomycetes (d) None of these
- (13) Most fungal diseases spread out in:
(a) Dry & Cold weather (b) Wet and cold
(c) Dry & Hot (d) None of these
- (14) Tikka disease of groundnut is renowned to:
(a) Thar (b) Chakwal
(c) Rawalpindi (d) None of these
- (15) The fruits & vegetables Contain an insoluble stiffening material called:
(a) Pectin (b) Lignin
(c) Protopectin (d) None of these
- (16) Substances added intentionally to foods for the purpose of making more profit termed as:
(a) Food contaminations (b) Food adulterants
(c) Food additives (d) None of these
- (17) *Lepus capensis* is the name of:
(a) Tiger (b) Lion
(c) Rat (d) None of these
- (18) Establishment of new crop naturally or artificially is:
(a) Silviculture (b) Sericulture
(c) Nursery (d) None of these
- (19) Meaningful statement about the economic behavior or the economy is called:
(a) Economic principles (b) Economic theories
(c) Both (a) and (b) (d) None of these
- (20) The measure of fluids resistance to sheer or angular deformation:
(a) Normality (b) Viscosity
(c) Compressibility (d) None of these
