

COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS IN BPS-17 UNDER THE FEDERAL GOVERNMENT, 2008

BOTANY, PAPER-I

TIME ALLOWED:		(PART-I)	30 MINUTES	MAXIMUM MARKS:20
		(PART-II) 2 Hours & 30 Minutes		MAXIMUM MARKS:80
	(i) First a	ttempt PART	-I (MCQ) on separate Answer S	heet which shall be taken back

(ii) Overwriting/cutting of the options/answers will not be given credit.

PART – I (MCQ) (COMPULSORY)

Q.1 Select the best option /answer and fill in the appropriate box on the Answer Sheet. (20)

- (i) The scientific names of plants are written:
 - (a) In italic font style
 - (b) Underline both generic and specific epithet separately
 - (c) In capital letters
 - (d) All of these
 - (e) None of these

(ii) After two years of secondary growth in a dicot root, the cortex will:

- (a) Remain as such (b) Be totally lost
- (c) Be converted into cork (d) Be mostly lost
- (e) None of these

(iii) Botanical name of bread wheat is:

- (a) Triticum durum (b) Triticum aestivum
- (c) Triticum indicum (d) Triticum vulgare
- (e) None of these
- (iv) Father of Botany is called:
 - (a) Linneus (b) Theophrastus
 - (c) Crick (d) Ostward Tippo
 - (e) None of these

(v) Carl Linneus is famous due to his:

- Binomial system of classification
- (c) Law of classification of plants and animal (d)
- (e) None of these

(vi) Thallophyta includes:

- (a) Algae, fungi and lichens (b)
- (c) Only algae and fungi (d) E
- (e) None of these
- (b) Algae and bryophytes(d) Bryophytes and Pteridophytes

(b)

Law of limiting factors

Rules of nomenclature

- of these
- (vii) In cryptogams, the sex organs are:
 - (a) Absent(b)(c) Primitive and hidden(d)
 - (c) Primuve and modeli (e) None of these

Primitive

Primitive and exposed

- (viii) Phanerogams are the plants which have:
 - (a) Exposed sex organ (b) Most primitive sex organs
 - (c) More or less hidden organs
 (d) All of these
 (e) None of these

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 (a) Covered flowers and seeds (b) Naked flowers and seeds (c) Naked flowers and covered seeds (d) Covered flowers and naked (e) None of these (a) Mimosaceae (b) Caesalpiniaceae (c) Scrophulariaceae (d) Fabaceae (e) None of these (f) Fruits are developed from: (a) Ovule (b) Ovary (c) Carpel (d) Inflorescence (e) None of these (xii) Which of the following represents a taxon? (a) Species (b) Genus (c) Family (d) All of these (xiii) Cotton and gram belong respectively to families: (a) Graminae and Malvaceae (b) Malvaceae and Fabaceae (c) Leguminosae and Malvaceae (d) Malvaceae and Cruciferae (e) None of these (xiv) Which of the following is a monocotyledonous family? (a) Solanaceae (b) Paoceae (c) Brassicaceae (d) Malvaceae (b) Paoceae (c) Brassicaceae (d) Malvaceae (e) None of these (xiv) Which of the following is true for fungi? (a) They are heterotrophic (b) Their cell wall is made up of chiting (c) Their plant body is hyphae (d) All of these (xivi) Which of the following types of inflorescences is found in Leucus and Ocimum (a) Catkin (b) Marginal (c) Verticillaster (d) Cyathium (e) None of these (xivii) When margins of the petals are just touching each other without any overlap, ae is called: (a) Twisted (b) Exarch (c) Mesarch (d) Any of these (xivii) The centripetal growth of metaxylem results in protoxylem being: (a) Endarch (b) Exarch (c) Mesarch (d) Any of these 	(a) Covered flowers and seeds (b) Naked flowers and nake (c) Naked flowers and covered seeds (d) Covered flowers and nake (e) None of these (d) Caesalpiniaceae (a) Mimosaceae (b) Caesalpiniaceae (c) Scrophulariaceae (d) Fabaceae (e) None of these (d) Inflorescence (c) Carpel (d) Inflorescence (e) None of these (d) All of these (xii) Which of the following represents a taxon? (a) Species (b) Genus (c) Family (d) All of these (e) None of these (xiii) Which of the following is a monocotyledonous family? (a) Galanaceae (b) Paoceae (c) Barasicaceae (d) Malvaceae and Cruciferae (e) None of these (xiv) Which of the following is a monocotyledonous family? (a) Solanaccae (b) Paoceae (c) Barasicaceae (d) Malvaceae and Cruciferae (e) None of these	ix)	Angiosperms are those plants which	have:		
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	(c) Absence of cambium (d) Absence of bundle sheath					
(e) None of these	(e) None of these	(e) None of these			

- Anomocytic Paracytic (b) (d)
- (a) (c) Diacytic Anisocytic

PART - II

NOTE:	(11)	PART-II is to be attempted on the separate Answer Book. Attempt ONLY FOUR questions from PART-II. All questions carry EQUAL marks.
		Illustrate your answers with suitable DIAGRAMS where necessary. Extra attempt of any question or any part of the attempted question will not be considered.

Q.2.	(a) Discuss the methods of reproduction in algae.(b) Write	
	 (b) Write an essay on the economic importance of algae. (c) What are the efficiency of algae. 	(10)
	(c) What are the affinities of algae with the land plants?	(6)
	and plants?	(4)
Q.3.	(a) Describe general characteristics of fungi.	
	(b) Compare and contrast the abarrar in the share in the	(10)
	(b) Compare and contrast the characteristics of Basidiomycetes with that of Zygomycetes.	
	(c) Write short note on parasexuality.	(6)
	and a parasexuality.	(4
Q.4.	(a) What are the affinities of Bryophyter with the are	
	(a) What are the affinities of Bryophytes with that of Pteridophytes and algae?(b) Draw a labeled diagram of longitudinal again and algae?	(8)
	(b) Draw a labeled diagram of longitudinal section of the sporophyte of <i>Anthocerose</i>.(c) Write a note on asexual reproduction of Bryophytes.	(8)
	a liste on usexual reproduction of Bryophytes.	(4)
Q.5.	(a) Describe the evolutionary trande is at	2.0
	(a) Describe the evolutionary trends in the structure of sporophyte among Pteridophytes.(b) Describe the characteristic features of Selavinella transmission of the structure of	(10)
	 (b) Describe the characteristic features of <i>Selaginella</i> towards seed habit. (c) Draw a labeled diagram of transverse section. 	(6)
	(c) Draw a labeled diagram of transverse section of stem of Equisetum.	(4)
Q.6.	(a) "Ginkgo is a living fossil" Comment on this statement.(b) What affinities of Comment on this statement.	(.)
	(b) What affinities of Gymposperice land in this statement.	(10)
	(b) What affinities of Gymnosperms have with Angiosperms?(c) Draw a labeled diagram of transmission of transm	(6)
	(c) Draw a labeled diagram of transverse section of the leaf of <i>Cycas</i> .	(4)
Q.7.	 (a) Describe in detail the cell types present in xylem. (b) Write potes on the CNU style present in xylem. 	(1)
	(b) Write notes on the following:	(11)
	(i) Nodal anatomy	(9)
	(ii) Sieve tubes	(2)
	(iii) Laticifers	
	(iii) Educiters	
Q.8.	a) What is Nomenclature? Described to the	
	a) What is Nomenclature? Describe the history of principles of nomenclature.b) Write the names of the families of any fine of the families.	(10)
	 b) Write the names of the families of any five of the following plants: (i) Cassia fistula 	(10)
	(ii) Tribulus aestivum	(10)
	aconvin	
	1 101110	
	0 m m Kann fortu	
	(vii) Punica grantum	





COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS IN BPS-17 UNDER THE FEDERAL GOVERNMENT, 2008

Roll	No.

BOTANY, PAPER-II

TIME ALLOWER	(PART-I)	30 MINUTES	MAXIMUM MARKS:20
TIME ALLOWED	(PART-II)	2 Hours & 30 Minutes	MAXIMUM MARKS:80
(i) First	attempt PART	'-I (MCQ) on separate Answe	r Sheet which shall be taken back

(i) First attempt PART-1 (MCQ) on separate Answer Sheet which shall be taken back after 30 minutes.
 (ii) Overwriting/cutting of the options/answers will not be given credit.

PART – I (MCQ) (COMPULSORY)

Q.1 Select the best option /Answer and fill in the appropriate Box on the Answer Sheet. (20)

- (i) Plants growing in extremely dry conditions are called:
 - (a) Hydrophytes (b) Xerophytes
 - (c) Mesophytes (d) Halophytes
 - (e) None of these

(ii) Desert plants have elongated root system, because:

- (a) Roots grow in search of water
- (b) High temperature of soil encourages root grow
- (c) Soil does not contain water hence becomes compact presses the roots to grow longer
- (d) Roots run more opposite to the sun heat
- (e) None of these

(iii) Recessive alleles are expressed only in the:

- Homozygous condition (b) Presence of supporting gene
- (c) Heterozygous condition (d) Dekaryotic condition
- (e) None of these

(a)

(iv) The law that alleles for two different phenotypic characters are distributed into gametes randomly is termed:

- (a) Law of segregation(c) Law of dominance
- (b) Law of independent assortment
- Law of dominance (d) Law of definite entity
- (e) None of these
- (v) If tall pea plants of F1 generation of the monohybrid cross are self crossed, the progeny F2 generation will have tall and dwarf plants in the ratio of:
 - (a) 3:1 (b) 1:3 (c) 1:1 (d) 2:1
 - (c) None of these

(vi) The science that deals with the study of living organisms in relation to their environment is called:

- (a) Environmental science (b) Ecology
- (c) Evolutionary biology (d) Systematic biology
- (e) None of these

(vii) Which of the following is increased due to vegetation in an area?

- (a) Rainfall (b) Temperature
- (c) Wind velocity (d) All of these
- (e) None of these

(viii)	Plant	show maximum photosynt	hesis in:			
A	(a)	Pure blue light	(b)	Pure	red light	
	(c)	Red and blue light	(d)		1 light	
	(e)	None of these	1.0			
(ix)	The s	seat of metabolic processes	in the cell	is main	v:	
	(a)	Cell wall	(b)		plasm	Y
	(c)	Mitochondria	(d)	Vacu		
	(e)	None of these				
(x)	Carb	on dioxide in the photosynt	hesis is:			
N	(a)	Oxidized	(b)	Redu	ced	
	(c)	Decarboxylated	(d)			
	(e)	None of these				
(xi)	The e	enzymes that can be hydrol	vse protein	ns are ca	lled:	
\$0.0.0FC	(a)	Peroxidases	(b)	Prote		
	(c)	Amlases	(d)	Catal	ases	
	(e)	None of these	10			
(xii)	Whic	ch of the following will be h	nigher in a	sugar s	olution of 1M as compared to 2M	
N.C. 1997	solut		- -	U		
	(a)	Turgour pressure		(b)	Osmotic pressure	
	(c)	Diffusion pressure of sol	vent	(d)	Diffusion pressure of sugar	
	(e)	None of these		10.000		
(xiii)	Synt	hesis of chlorophyll in plan	ts is adver	selv affe	ected by:	
	(a)	Mg deficiency	(b)		eficiency	
	(c)	Oxygen deficiency	(d)	Fe de	ficiency	
	(e)	None of these				2
(xiv)	Whie	ch of the following promote	es more ve	getative	growth in plants?	
	(a)	Nitrogen	(b)	Calci		
	(c)	Iron	(d)	Zinc		
	(e)	None of these				
(xv)	Assi	milatory power of plants re	fers to:			
	(a)	Formation of ATP and N		(b)	Reduction of CO2	
	(c)	Splitting of water		(d)	Solar energy	
	(e)	None of these			and a second state	
(xvi)	The	rate of transpiration in leave	es of the a	pple pla	nt will be:	
	(a)	Higher on lower side	(b)	High	er on upper side	
	(c)	Equal on both sides	(d)	Alter	nately high on both sides	
	(e)	None of these	5335		85. (MAR)	
(xvii)	Muta calle		ire conside	red con	plementary to each other in the theory	ſŸ
	(a)	Classical Darwinism	(b)		Darwinism	
	(c)	Lamarckism	(d)	Weis	mannism	
	(e)	None of these	10.27			
(xviii)	In which type of fossils, original organism undergoes complete mineralization?					
	(a)	Impression	(b)	Com	pression	
	(c)	Mould	(d)	Petri	fication	1
	(e)	None of these				

(c) Mould(e) None of these

BOTANY, PAPER-II

(and a lar	10.0		
(XIX)	If forests are cleared	for economic activity	biodiversity of the area will be:

(a) Increased

- Decreased (b)
- Unaffected (c) (e)
- (d) Fluctuating
- None of these

Which of the following affects the plants but less the animals? (XX)

- Air pollution (a) (b) Water pollution (c)
 - Soil pollution (d) All of these
- (e) None of these

PART - II

NOTE:	 (i) PART-II is to be attempted on the separate Answer Book. (ii) Attempt ONLY FOUR questions from PART-II. All questions carry EQUAL marks. Illustrate your answers with suitable DIAGRAMS where necessary. (iii) Extra attempt of any question or any part of the attempted question will not be considered.
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Q.2.	(a (b	Define plant growth hormone. Discuss the role of auxins in plant growth. Describe the role of ethylene in fruit ripening.	(2+10) (8)
Q.3.	(a) (b)	Discuss the process of CO fixation in C_3 and C_4 plants. Draw the Z-scheme of photosynthesis.	(6+6) (8)
Q.4.		Write notes on the following:(i)TCA cycle(ii)Micronutrients(iii)Mechanism of enzyme action 4(iv)Photophosphorylation	(5x4)
Q.5.	(a) (b)	Write notes on:	(2+8) (5+5)
Q.6.		Write short notes on the following: (i) (i) Air pollution (ii) Energy flow in ecosystem (iii) Natural resources (iv) Climate zones	(5x4)
Q.7.	(b)	Describe the ultra structure of Mitochondria. Enlist the functions of Mitochondria. What do you know about the evolution of Mitochondria?	(10) (6) (4)
Q.8.		What are the characteristics of a model alert	(14) (6)
