M.Sc (Ag) in Soils water Conservation

16P/305/15

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Duestion	Booklet	NO.			

	(To be filled up	p by the candidate by blue/b	lack ball-point pen)
Roll No.			
Roll No. (Write the digits	s in words)	Code MO (7	702
Serial No. of O	MR Answer Sheet	(243)	
Day and Date		(2017)	(Signature of Invigilator)

INSTRUCTIONS TO CANDIDATES

(Use only blue/black ball-point pen in the space above and on both sides of the Answer Sheet)

- 1. Within 30 minutes of the issue of the Question Booklet, check the Question Booklet to ensure that it contains all the pages in correct sequence and that no page/question is missing. In case of faulty Question Booklet bring it to the notice of the Superintendent/Invigilators immediately to obtain a fresh Question Booklet.
- 2. Do not bring any loose paper, written or blank, inside the Examination Hall except the Admit Card without its envelope.
- 3. A separate Answer Sheet is given. It should not be folded or mutilated. A second Answer Sheet shall not be provided. Only the Answer Sheet will be evaluated.
- 4. Write your Roll Number and Serial Number of the Answer Sheet by pen in the space provided above.
- 5. On the front page of the Answer Sheet, write by pen your Roll Number in the space provided at the top, and by darkening the circles at the bottom. Also, wherever applicable, write the Question Booklet Number and the Set Number in appropriate places.
- 6. No overwriting is allowed in the entries of Roll No., Question Booklet No. and Set No. (if any) on OMR sheet and also Roll No. and OMR Sheet No. on the Question Booklet.
- 7. Any change in the aforesaid entries is to be verified by the invigilator, otherwise it will be taken as unfair means.
- 8. Each question in this Booklet is followed by four alternative answers. For each question, you are to record the correct option on the Answer Sheet by darkening the appropriate circle in the corresponding row of the Answer Sheet, by ball-point pen as mentioned in the guidelines given on the first page of the Answer Sheet.
- 9. For each question, darken only one circle on the Answer Sheet. If you darken more than one circle or darken a circle partially, the answer will be treated as incorrect.
- 10. Note that the answer once filled in ink cannot be changed. If you do not wish to attempt a question, leave all the circles in the corresponding row blank (such question will be awarded zero mark).
- For rough work, use the inner back page of the title cover and the blank page at the end of this 11.
- 12. Deposit only the OMR Answer Sheet at the end of the Test.
- 13. You are not permitted to leave the Examination Hall until the end of the Test.
- 14. If a candidate attempts to use any form of unfair means, he/she shall be liable to such punishment

। उपर्युक्त निर्देश हिन्दी में अन्तिम आवरण-पृष्ठ पर दिये गए हैं।

[No. of Printed Pages: 20+2

No. of Questions: 120

Time: 2 Hours

Full Marks: 360

Note:

- (1) Attempt as many questions as you can. Each question carries 3 marks.
 One mark will be deducted for each incorrect answer. Zero mark will be awarded for each unattempted question.
- (2) If more than one alternative answers seem to be approximate to the correct answer, choose the closest one.
- 1. Porosity of soil can be expressed as

(1)
$$\left(\frac{BD}{PD} - 1\right) \times 100$$

(2)
$$100 - \frac{BD}{PD}$$

$$(3) \left(1 - \frac{PD}{BD}\right) \times 100$$

(4)
$$100 - \frac{PD}{BD} \times 100$$

- 2. Volumetric composition of organic matter in soil is
 - (1) 25%
- (2) 50%
- (3) 45%
- (4) 5%

(170)

(170)

3.	Weight of one hectare furrow slice of root	zone depth (15 cm) of soil is about
	(1) 2×10^6 kg (2) 1.5×10^6 kg (3)	20×10^6 kg (4) 15×10^6 kg
4.	The average arable surface soil may be con	nsidered to have a particle density of
	(1) 1.63 Mg/m^3 (2) 2.66 Mg/m^3 (3)	1.33 Mg/m^3 (4) 2.33 Mg/m^3
5.	The sizes of silt fractions in soils in ISS	S system are
	(1) 0·2–0·02 mm (2)	0·2-0·002 mm
	(3) 0·2-0·002 mm (4)	0·05–0·002 mm
6.	What will be the texture of soil if it contain	n 60% sand, 30% silt and 10% clay?
	(1) Silt loam (2) Sandy loam (3)	Clay loam (4) Sandy clay
7.	Stokes' law suggests the rate of fall of square of	particle is directly proportional to the
	(1) density of the particle (2)	density of the fluid
		radius of the particle
8.	. Void ratio of soil is expressed as	
	(1) the ratio of volume of pores to the	soil solids
	(2) the ratio of volume of soil solids to	the pore volume
	(3) the ratio of pore volume to the total	1 volume
	(4) the ratio of total volume to the por	e volume
	0	

9.	Which one is correct?	
	(1) 1 bar = 10^5 dynes/cm ²	(2) 1 Pascal = 10 Nm^{-2}
	(3) 1 Pascal = 0·1 bar	(4) 1 Megapascal = 10 bars
10.	Pyroxene minerals are the example	es of
	(1) tectosilicates	(2) phyllosilicates
	(3) single-chain ionosilicates	(4) double-chain ionosilicates
11.	Unconsolidated material above the	bed rock is called
	(1) Solum (2) Regolith	(3) A horizon (4) C horizon
12.	Which soil moisture potential is ne	gative in nature?
	(1) Pressure potential	(2) Matric potential
	(3) Pressure and matric potential	(4) Matric and osmotic potential
13.	CEC of which clay mineral is higher	est?
	(1) Kaolinite.	(2) Montmorillonite
	(3) Vermiculite	(4) Illite
14.	The water content on mass basis multiplying it with	can be converted into volume basis by
	(1) bulk density	(2) particle density
	(3) flux density	(4) hydraulic conductivity
(170)	3	5.7 (545)
		(P.T.O.)

(1) 10 (2) 11 (3) 12 (4) 14 16. Who is called father of Pedology? (1) N. C. Brady (2) H. Jenny (3) V. V. Dokuchaev (4) K. D. Glinka 17. Transformation of minerals during weathering follows in the order of the o	15.	How many soil orders are involved i	n USDA soil classif	ication system?
(1) N. C. Brady (2) H. Jenny (3) V. V. Dokuchaev (4) K. D. Glinka 17. Transformation of minerals during weathering follows in the order of (1) Mica ⇒ Illite ⇒ Vermiculite ⇒ Montmorillonite (2) Mica ⇒ Montmorillonite ⇒ Vermiculite ⇒ Illite (3) Mica ⇒ Vermiculite ⇒ Illite ⇒ Montmorillonite (4) Mica ⇒ Montmorillonite ⇒ Illite ⇒ Vermiculite 18. The silt particles transported by the action of wind are termed as (1) aeolian (2) loess (3) alluvium (4) colluvium 19. Micas are examples of (1) tectosilicates (3) phyllosilicates (4) ionosilicates (5) Undulating topography of land surface have the slopes of (1) < 2% (2) 2-8% (3) 8-16% (4) > 16%		(1) 10 (2) 11	(3) 12	(4) 14
(3) V. V. Dokuchaev (4) K. D. Glinka 17. Transformation of minerals during weathering follows in the order of (1) Mica = Illite = Vermiculite = Montmorillonite (2) Mica = Montmorillonite = Vermiculite = Illite (3) Mica = Vermiculite = Illite = Montmorillonite (4) Mica = Montmorillonite = Illite = Vermiculite 18. The silt particles transported by the action of wind are termed as (1) aeolian (2) loess (3) alluvium (4) colluvium 19. Micas are examples of (1) tectosilicates (2) orthosilicates (3) phyllosilicates (4) ionosilicates 20. Undulating topography of land surface have the slopes of (1) < 2% (2) 2-8% (3) 8-16% (4) > 16%	16.	Who is called father of Pedology?		150
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(1) < 2% (2) 2-8% (3) 8-16% (4) > 16%	20	Undulating topography of land sur	face have the slope	s of
4	20.	10) 0 00/	(3) 8–16%	(4) >16%
(170)			4	e a

21.	Soil pH is measur	red by making so	oil: water suspe	nsion in the ratio of
	(1) 1:10	(2) 1:2.5	(3) 1:5	(4) 1:1
22.	Lime potential of	soil can be writte	en as	
	(1) p (Ca + Mg) - p	Н	(2) pH - p (Ca	a + Mg)
	(3) $\frac{1}{2}$ p (Ca + Mg) –	рН	(4) $pH - \frac{1}{2}p$ (Ca + Mg)
23.	Which types of soil	structure is mos	t important from	crop growth point of view?
	(1) Platy	(2) Prismatic	(3) Crumb	(4) Granular
24.	pH for most mine	ral soil lying in t	the ranges between	een
	(1) 0–14	(2) 1.5–13.5	(3) 6–8	(4) 3-11
25.	Phosphorus is tal	ten by plants in	the form of	
	(1) H ₃ PO ₄	(2) PO ₄ ³ -	(3) H ₂ PO ₄	(4) P ⁵⁺
26.	1 ha cm is equal	to		
	(1) 10 m ³	(2) 1 m ³	(3) 1000 m ³	(4) 100 m ³
27.	Puddling is needed	l in paddy cultiv	ation to minimis	se
	(1) evaporation los	SS,	(2) evapo-trar	spiration loss
	(3) percolation los	S	(4) conveyance	
	,		• ## ## ## ## ## ## ## ## ## ## ## ## ##	
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(170)

28.	The process of biological conversion	of a	ammonia into n	itrate is known as
	(1) ammonification	(2)	nitrification	
	(3) humification	(4)	denitrification	
29.	Zinc containing mineral is			
	(1) pyrolusite (2) olivine	(3)	haematite	(4) zircon
30.	Black cotton soil is dominated by wi	hich	type clay mine	erals?
	(1) Kaolinite	(2)	Montmorillonit	e
	(3) Chlorite	(4)	Vermiculite	
31.	The 2:2 type of mineral is the chara	acte	ristics of	
	(1) Vermiculite	(2)	Illite	
	(3) Montmorillonite	(4)	Chlorite	× (8)
32.	Allophane material has been detected	d in	the soil order	of
	(1) Histosols (2) Aridisols		Andosols	(4) Ultisols
33.	Which one is not an essential micro	nut	rient element?	
	(1) B (2) Cl			(4) Si
2	Which nutrient is known as immobi	ile r	nutrient element	t?
34.		(3)	Calcium	(4) Zinc
	(1) Potassium (2) Sulfur	10		
	,			

35.	Which nutrient elements imparts th	ne role of indirect drought resistance?
	(1) Potassium (2) Calcium	(3) Magnesium (4) Sulfur
36.	Which one is the aerobic non-symbol	iotic nitrogen fixing bacteria?
	(1) Azotobacter (2) Clostridium	(3) Rhizobium (4) Beijerinckia
37.	The factor responsible for formation	of acid soil is
	(1) low rainfall	(2) high rainfall
	(3) high evaporation	(4) low rainfall and high evaporation
38.	Which is not related with podzotisat	tion?
	(1) D	(2) Acid soil
	(3) Tropical climate	(4) High rainfall
20	0-1:	
39.	Saline soils have the characteristics	
	(1) EC > 4 mmhos/cm, pH > 8.5 an	d ESP > 15
	(2) EC < 4 mmhos/cm, pH > 8.5 and	d ESP > 15
	(3) EC > 4 mmhos/cm, pH < 8.5 and	
	(4) EC < 4 mmhos/cm, pH < 8.5 and	d ESP < 15
40.	Illuviation is the process of	
	200	
	(1) accumulation	(2) leaching
	(3) weathering	(4) transformation
(170)	7	¥ '
		(P.T.O.)

41.	Presence of argillio	c horizon with low	base saturation fo	and in the order of
	(1) inceptisols	(2) spodosols	(3) vertisols	(4) ultisols
42.	The pH of the acid	d sulfate soils occu	ur as	
	(1) 5–6	(2) 6–7	_(3) 4–5	(4) < 4
43.	The working range	e of soil tensiomete	er is	
	(1) 0-1·0 bar	(2) 0-0·85 bar	(3) 0-1.85 bar	(4) 0-1.5 bar
44.	High salt tolerant	crop is		
	(1) rice	(2) pea	(3) gram	(4) sunhemp
45.	Khaira discase of	rice is caused due	e to	•
	(1) fungal infectio	n	(2) excessive K ap	pplication
	(3) boron deficien	су	(4) zinc deficiency	y
46.	Which element ha	s a role in energy t	transformation and	metabolic processes in
	(1) N	(2) P	(3) Mo	(4) S
47.	The main reason	for sheet erosion	is	*
	(1) wind	(2) rainfall	(3) temperature	(4) organic matter
		·	8	
(170)	(o .	

48.	Hydrometer is used	d to determine				
	(1) soil moisture co	ontent	(2)	soil hydraulic	conductivity	
	(3) soil aggregate s	size	(4)	soil texture	ā	
49.	Dark coloured soils	s are the charact	teristi	ics of	e e	
	(1) entisols	(2) spodosols	(3)	ultisols	(4) mollisol	s
50.	Which suborder is	not occurred un	ider e	entisols?		
	(1) Aquepts	(2) Orthents	(3)	Fluvents	(4) Arents	
51.	Maximum wind ero	sion is recorded	in th	ne season of		
	(1) Winter (2) Rainy	(3)	Summer	(4) Spring	
52.	Classification of irri	gation water as o	detern	nined by a dia	gram which re	epresents
	(1) EC and SAR		(2)	pH and EC		
	(3) pH and salt con	itent	(4)	EC and salt c	ontent	
53.	Black soil commonly	y represent the o	order	of		
	(1) alfisols (2	e) vertisols	(3)	spodosols	(4) ultisols	
54.	Wind erosion is the	highest in the S	State	of India		
	(1) Kerala			Madhya Prades	sh	
	(3) Jharkhand			Rajasthan	0.0049	
(170)		9				
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55.	Neutron moisture meter is not suitable in				
	(1) waterlogged so	oil	(2) acid soil	2	
	(3) alkaline soil		(4) organic so	il	
56.	Intermixing of soi	l horizons in certa			
	(1) horizonation	(2) gleization	(3) pedoturbat	tion (4) argillation	
57.	Hill soils are gene	erally		•	
	(1) neutral	(2) acidic	(3) saline	(4) alkaline	
	(TT) : (1irromo	al soil loss equation	on represent		
58.		*		ility factor	
	(1) rainfall erosiv	ity factor	(2) soil erodib		
	(3) slope factor		(4) crop mana	agement factor	
59 .	Micronutrient con	ntents in soils are	measured by w	hich instrument?	
	(1) Atomic absor	ption spectrophoto	meter	* *	
	(2) Flame photor	neter			
	(3) Colorimeter		2		
	(3) Color mices	manhatameter			
	(4) UV-VIS spect				
60	How many diagr	nostic surface horiz	zons consist in	soil taxonomy?	
00	(1) 12	(2) 10	(3) 9	(4) 5	
			10		

61. Sodium adsorption ratio is expressed as

(1)
$$\frac{Na^{+}}{\sqrt{Ca^{++} + Mg^{++}}}$$

(2)
$$\frac{Na^{+}}{\sqrt{Ca^{++} + Mg^{++}}}$$

(3)
$$\frac{\frac{Na^{+}}{2}}{\sqrt{Ca^{++} + Mg^{++}}}$$

(4)
$$\frac{\text{Na}^+}{2 \times \sqrt{\text{Ca}^{++} + \text{Mg}^{++}}}$$

62. Which chemicals are not used as amendments for reclaiming the saline soils?

- (1) Gypsum
- (2) Pyrites
- (3) Sulfur
- (4) Limestone

63. High analysis fertilizers are those

- (1) which require high cost of analysis
- (2) which require high-level analysis procedure
- (3) which contain high percentage of nutrient element
- (4) whose analysis gives higher percentage of nutrient than actual content

64. Which bacteria involves for the reduction of sulfur in soil?

(1) Thiobacillus

(2) Desulfovibrio

(3) Pseudomonas

(4) Bacillus

65. The Indian Institute of Soil Science is situated at

- (1) New Delhi
- (2) Bangaluru
- (3) Bhopal
- (4) Ahmedabad

(170)

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(P.T.O.)

66.	Which is not associated with wind e	rosi	on?		
	(1) Saltation	(2)	Overland flow		
	(3) Surface creeping	(4)	suspension		
67 .	At a particular soil moisture tension content?	n, w	hich soil have	the	highest moisture
	(1) Sandy (2) Loamy	(3)	Silty loam	(4)	Clayey
68.	How many number of classes consis	t in	land capability	cla	ssification?
	(1) 8 (2) 4	(3)	6	(4)	10
69.	Which of the nitrogenous fertiliser co	onta	ins amide grou	p?	
	(1) Ammonium sulfate	(2)	CAN	٠	
	(3) Urea	(4)	Sodium nitrate	;	
70.	Terai soils are rich in				
	(1) mineral matter	(2)	organic matter	į.	
	(3) soluble salts	(4)	soil moisture		
71.	Shelter belts are used to control				
	(1) water erosion (2) wind erosion			(4)	soil crusting
72.	What will be the pF values at field	capa	acity in soil?		
,	(1) 2.0 (2) 3.0		2.5	(4)	4.2
(170)	. 13	2			
(710)					

73.	In land capability classification, the la	ands falling under Class V to Class VIII are
	(1) suitable for cultivation	
	(2) unsuitable for cultivation	
	(3) suitable for only wildlife conserv	ation
	(4) only for grassland farming	
74.	. The characteristics of Andisols are	
	(1) soils developed from volcanic as	h ,
	(2) weekly developed mineral soils v	vith no profile development
	(3) soils with the initial stage of pro	ofile development
	(4) highly weathered, presence of ox	tic horizon
75 .	The first phase of water erosion is	
	(1) Gully erosion	(2) Rill erosion
	(3) Sheet erosion	(4) Splash erosion
76 .	Which soils are also called 'cat-clays	Y'?
	(1) Acid sulfate soils	(2) Desert soils
	(3) Lateritic soils	(4) Podsols
77 .	What is the C:N ratio of normal soil	2 2
	(1) 5.1 (2) 10.1	(3) 15:1 (4) 20:1
(170)	13	
	10	(P,T,O)

78.	Tensiometer is used to measure		
	(1) gravitational potential	(2) matric potential	
	(3) osmotic potential	(4) pressure potential	
79.	Piezometer is an instrument used t	to measure	
	(1) rainfall	(2) depth of soil	
	(3) relative humidity	(4) depth of water table	
80.	Which gas is emitted due to rice co	cultivation?	
	(1) CO (2) CO ₂	(3) CH ₄ (4) NH ₄	
81.	(3) Require similar conservation tr(4) Limitations encountered for using	subclass s with similar management practices reatment	s
82.	(1) maogen	(3) potassium (4) sulfur	
	Available water content in soil lies (1) 0-1/3 bar (2) 0-15 bars	s in the range of (3) 1/3-15 bars (4) 15-30 bar	rs

84.	Which fertiliser is not produced in the country?						
	(1) Urea	(2) DAP	(3)	CAN .	(4)	MOP	
85.	Rothamsted Expe	rimental Station is	situ	ated at			
	(1) UK	(2) Germany	(3)	USA	(4)	Nigeria	
86.	Which soil conser areas?	vation measures a	are re	ecommended or	n st	eep slopes o	of hilly
	(1) Contour bund	S	(2)	Graded bunds		Hed	
	(3) Bench Terrace	es	(4)	Grassed water	way	3	
87.	The area of miniw	atershed is					
	(1) 10-100 ha		(2)	100-1000 ha			
	(3) 1000–10000 h	a	(4)	> 10000 ha			
88.	Which of the follo	wing properties are	e des	cribed by Phill	ip's	equation?	
	$I = St^{\frac{1}{2}} + Kt$						
	(1) Gas diffusion		(2)	Thermal diffusi	ion		
	(3) Soil permeabili	ty	(4)	Soil infiltration			
89.	Which soil moistur	re range is optimu	m fo	r tillage operati	ons	?	
	(1) Hard consisten	· ·	(2) 1	Friable consiste	ncy		
	(3) Plastic consiste	ency	(4) \$	Sticky consisten	су		
(170)		15		- Auto-		patrice	
						(P.	T.O.)

90.	Which is not matched with conserva	tion tillage?	
	 Increases soil organic matter cor Reduces cost of cultivation Destructs soil aggregation Increase the incidence of plant of 		residues
91.	Regur is the local name for (1) black soils (2) lateritic soils		(4) saline soils
92.	Which soils have no diagnostic horiz		
	(1) Mollisols (2) Entisols	(3) Aridisols	(4) Oxisols
93.	Which of the following is determined by	by the use of Walkle	ey and Black's method?
	(1) K	(2) S	
	(3) Organic matter	(4) Cation excha	nge capacity
04	Which soil order have highest area	in India?	•
94.	(1) Entisols (2) Altisols	(3) Vertisols	(4) Inceptisols
95.	Flame photometer is used in the de	termination of	
,,,,	(1) phosphorus (2) potassium	(3) sulfur	(4) zinc
06	Which is not suitable for podzolisat	ion?	
96.		(2) High organic	matter
	(1) Acidic soil	(4) Abundant m	oisture
	(3) Hot and humid climate	(1)	
	1	6	
(170)			

97.	Which mineral	is an important s	source of potassium	?
	(1) Pyroxenes	(2) Albite	(3) Plagioclase	(4) Feldspars
98.	Which one is p	hyllosilicates in n	ature?	×
	(1) Mica	(2) Quartz	(3) Feldspars	(4) Olivine
99.	Which is not th	e passive factors	of soil formation?	
	(1) Parent mate	rial	(2) Climate	
	(3) Relief		(4) Time	
100.	Which element i	imparts red colou	r to the soil?	
	(1) Ca	(2) Mg	(3) Fe	(4) S
101.	Which elements	are used as disp	ersing agent?	#8
	(1) Na	(2) Ca	(3) P	(4) Fe
102.	What common cations in soils?	extractants are u	sed for the determ	ination of exchangeable
g	(1) HCl	(2) NH ₄ OH		(4) NH ₄ OAC
103.	In master horizon (illuviation)?	n of a soil profile,	which one is the h	orizon of accumulation
	(1) A horizon	(2) E horizon	(3) B horizon	(4) C horizon
(170)		1	7	
	* (#)	•	· ·	(P.T.O.)

Which is not matched with later	rization?			
104. Which is not matched with laterization? (1) Tropical and semitropical region				
				(2) High temperature and high t
(3) Removal of Fe and Al				
(4) Formation of 1:1 type of clay	mineral			
Acid sulfate soils occur in the re	egion of			
(1) hilly areas	(2) forest area			
(3) alluvial plane areas	(4) coastal areas			
The color notation of Class II la	nd is			
(1) yellow (2) red	(3) orange (4) brown			
Hue variable in Munsell Color C	Chart describes which of the following?			
(1) Lightness/darkness of the d	ominant spectral color			
(2) Dominant spectral color				
(3) Purity of dominant color	v			
(4) Intensity of dominant spectr	ral region			
108. Attraction of similar kinds of particles is known as				
(1) van der Walls' force	(2) adhesion			
	(4) coherent			
(-)	18			
)	10			
	(1) Tropical and semitropical reg (2) High temperature and high it (3) Removal of Fe and Al (4) Formation of 1:1 type of clay Acid sulfate soils occur in the r (1) hilly areas (3) alluvial plane areas The color notation of Class II la (1) yellow (2) red Hue variable in Munsell Color (3) Lightness/darkness of the d (2) Dominant spectral color (3) Purity of dominant color (4) Intensity of dominant spectral			

109.	Which is not u	nder diagnostic su	bsurface horizon?	
	(1) Argillic	(2) Natric	(3) Cambic	(4) Plaggen
110.		annual soil temper gime are classified	rature ranges between	een 8 °C to 15 °C, then the
	(1) Frigid	(2) Thermic	(3) Mesic	(4) Cryic
111.	Biofertilisers ar	e		
	(1) are the prod	ucts containing livi	ing cells of different	t types of micro-organisms
	(2) mixture of	vermicomposts and	l inorganic fertilise	ers
	(3) mixture of	vermicomposts and	l organic manures	
	(4) mixture of (organic manures a	nd inorganic fertili	isers
112.	Which is not ge	enera of blue-green	algae?	
	(1) Anabaena	(2) Pseudomona	a (3) Nostoc	(4) Calothrix
113.	Which of the fo	llowing role, the or	ganic matter does	not have?
	(1) Improves soil aggregation			
	(2) Supplies son	ne essential nutrie	nts to soil	*
	(3) Favours soil	erosion		
	(4) Increases wa	ter holding capaci	ty in soil	
114.	Which are not c	lassified as humic	substances?	
		(2) Fulvic acid	10000	(4) Humin
(170)	***	1	9	
				(P.T.O.)

115.	VAM is				
	(1) a microbial inoculant occur in	plant roots			
	(2) a mycorrhiza occur in plant re	oots			
	(3) a phosphate solubilising micro	o-organism			
	(4) a mycorrhiza occurs as mutua fungi	listic symbiosis betwe	een plant roots and soil		
116.	What common extractants are use Cu in soil?	d to determine the av	ailability of Fe, Mn, Zn,		
	(1) EDTA (2) DTPA	(3) NH ₄ OAC	(4) HCl		
117.	Which of the following cannot for	m chelated compoun			
	(1) Fe (2) Mn	(3) Zn	(4) Mo		
118.	18. Which elements play the role of chlorophyll synthesis?				
110.	(1) Ca (2) Mg	(3) K	(4) Zn		
119.	. Thiobacillus denitrificans micro-o	rganisms involve in t	ne process of conversion		
	of .				
	(1) $NO_3 \longrightarrow N_2$, N_2O	(2) $NO_2 \longrightarrow NO_2$			
	$(3) NH_4^+ \longrightarrow NO_3$				
120.). In which year International Year	of Soil is celebrated	13		
120.	(1) 2010 (2) 2012	(3) 2013	(4) 2015		
		***	D/6(170)—650		
	*	20	D/0(110)—000		

अभ्यर्थियों के लिए निर्देश

(इस पुस्तिका के प्रथम आवरण-पृष्ठ पर तथा उत्तर-पत्र के दोनों पृष्ठों पर केवल नीली या काली बाल-प्वाइंट पेन से ही लिखें)

- 1. प्रश्न पुस्तिका मिलने के 30 मिनट के अन्दर ही देख लें कि प्रश्नपत्र में सभी पृष्ठ मौजूद हैं और कोई प्रश्न छूटा नहीं है। पुस्तिका दोषयुक्त पाये जाने पर इसकी सूचना तत्काल कक्ष-निरीक्षक को देकर सम्पूर्ण प्रश्नपत्र की दूसरी पुस्तिका प्राप्त कर लें।
- 2. परीक्षा भवन में *लिफाफा रहित प्रवेश-पत्र के अतिरिक्त,* लिखा या सादा कोई भी खुला कागज साथ में न लायें।
- उत्तर-पत्र अलग से दिया गया है। इसे न तो मोड़ें और न ही विकृत करें। दूसरा उत्तर-पत्र नहीं दिया जायेगा, केवल उत्तर-पत्र का ही मूल्यांकन किया जायेगा।
- 4. अपना अनुक्रमांक तथा उत्तर-पत्र का क्रमांक प्रथम आवरण-पृष्ठ पर पेन से निर्धारित स्थान पर लिखें।
- 5. उत्तर-पत्र के प्रथम पृष्ठ पर पेन से अपना अनुक्रमांक निर्धारित स्थान पर लिखें तथा नीचे दिये वृत्तों को गाढ़ा कर दें। जहाँ-जहाँ आवश्यक हो वहाँ प्रश्न-पुस्तिका का क्रमांक तथा सेट का नम्बर उचित स्थानों पर लिखें।
- 6. ओ॰ एम॰ आर॰ पत्र पर अनुक्रमांक संख्या, प्रश्न-पुस्तिका संख्या व सेट संख्या (यदि कोई हो) तथा प्रश्न-पुस्तिका पर अनुक्रमांक सं॰ और ओ॰ एम॰ आर॰ पत्र सं॰ की प्रविष्टियों में उपरिलेखन की अनुमित नहीं है।
- 7. उपर्युक्त प्रविष्टियों में कोई भी परिवर्तन कक्ष निरीक्षक द्वारा प्रमाणित होना चाहिये अन्यथा यह एक अनुचित साधन का प्रयोग माना जायेगा।
- 8. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार वैकल्पिक उत्तर दिये गये हैं। प्रत्येक प्रश्न के वैकल्पिक उत्तर के लिये आपको उत्तर-पत्र की सम्बन्धित पंक्ति के सामने दिये गये वृत्त को उत्तर-पत्र के प्रथम पृष्ठ पर दिये गये निर्देशों के अनुसार पेन से गाढ़ा करना है।
- प्रत्येक प्रश्न के उत्तर के लिये केवल एक ही वृत्त को गाढ़ा करें। एक से अधिक वृत्तों को गाढ़ा करने पर अथवा एक वृत्त को अपूर्ण भरने पर वह उत्तर गलत माना जायेगा।
- 10. ध्यान दें कि एक बार स्याही द्वारा अंकित उत्तर बदला नहीं जा सकता है। यदि आप किसी प्रश्न का उत्तर नहीं देना चाहते हैं, तो सम्बन्धित पंक्ति के सामने दिये गये सभी वृत्तों को खाली छोड़ दें। ऐसे प्रश्नों पर शून्य अंक दिये जायेंगे।
- 11. रफ़ कार्य के लिये प्रश्न-पुस्तिका के मुखपृष्ठ के अन्दर वाले पृष्ठ तथा अंतिम पृष्ठ का प्रयोग करें।
- 12. परीक्षा के उपरान्त केवल *ओ०एम०आर० उत्तर-पत्र* परीक्षा भवन में जमा कर दें।
- 13. परीक्षा समाप्त होने से पहले परीक्षा भवन से बाहर जाने की अनुमित नहीं होगी।
- 14. यदि कोई अभ्यर्थी परीक्षा में अनुचित साधनों का प्रयोग करता है, तो वह विश्वविद्यालय द्वारा निर्धारित दंड का/की, भागी होगा/होगी।