प्रश्नपुस्तिका क्रमांक BOOKLET No. 2018

प्रश्नपुस्तिका - III

**\12** संच क्र

केंद्राची संकेताक्षरे

A

300745

पेपर क्र. - 2 कृषि अभियांत्रिकी

एकूण प्रश्न : 100

एकूण गुण : 200

शेवटचा अंक

वेळ : 1 (एक) तास

### सूचना

- (1) सदर प्रश्नपुस्तिकेत 100 अनिवार्य प्रश्न आहेत. उमेदवारांनी प्रश्नांची उत्तरे लिहिण्यास सुरुवात करण्यापूर्वी या प्रश्नपुस्तिकेत सर्व प्रश्न आहेत किंवा नाहीत याची खात्री करून घ्यावी. असा तसेच अन्य काही दोष आढळल्यास ही प्रश्नपुस्तिका समवेक्षकांकडून लगेच बदलून घ्यावी.
- (2) आपला परीक्षा-क्रमांक ह्या चौकोनांत न विसरता बॉलपेनने लिहावा.
- (3) वर छापलेला प्रश्नपुस्तिका क्रमांक तुमच्या उत्तरपत्रिकेवर विशिष्ट जानी उत्तरपत्रिक्तिस्ति सूचनेप्रमाणे न विसरता नमूद करावा.
- (4) या प्रश्नपुस्तिकेतील प्रत्येक प्रश्नाला 4 पर्यायी उत्तरे सुचिवली उत्तू त्या 1, 2, 3 आणि 4 असे क्रमांक दिलेले आहेत. त्या चार उत्तरांपैकी सर्वात योग्य उत्तराचा क्रमांक उत्तरपत्रिकेवरील सूचने माणे तुमच्या उत्तरपत्रिकेवर नमूद करावा. अशा प्रकारे उत्तरपत्रिकेवर उत्तरक्रमांक नमूद कराताना तो संबंधित प्रश्नक्रमानासमार छायांकित करून दर्शविला जाईल याची काळजी घ्यावी. ह्याकरिता फक्त काळ्या शाईचे बॉलपेन वापरावे, किंदा वा शाईचे पेन वापरू नये.
- (5) सर्व प्रश्नांना समान गुण आहेत. यास्तव सर्व प्रश्नाची तरे द्यावीत. घाईमुळे चुका होणार नाहीत याची दक्षता घेऊनच शक्य तितक्या वेगाने प्रश्न सोडवावेत. क्रमाने प्रन सोडविणे श्रेयस्कर आहे पण एखादा प्रश्न कठीण वाटल्यास त्यावर वेळ न घालविता पुढील प्रश्नाकडे वळावे अश प्रकारे शेवटच्या प्रश्नापर्यंत पोहोचल्यानंतर वेळ शिल्लक राहिल्यास कठीण म्हणून वगळलेल्या प्रश्नांकडे परतणे सोईस्कर ठोज.
- (6) उत्तरपत्रिकेत एकदा नमूद के कि तत्र खोडता येणार नाही. नमूद केलेले उत्तर खोडून नव्याने उत्तर दिल्यास ते तपासले जाणार नाही.
- (7) प्रस्तुत परिक्षेच्या उत्तरपत्रिकांचे मूल्यांकन करताना उमेदवाराच्या उत्तरपत्रिकेतील योग्य उत्तरांनाच गुण दिले जातील. तसेच ''उमेदवाराने वस्तुनिष्ठ बहुपर्यायी स्वरूपाच्या प्रश्नांची दिलेल्या चार उत्तरापैकी सर्वात योग्य उत्तरेच उत्तरपत्रिकेत नमूद करावीत. अन्यथा त्यांच्या उत्तरपत्रिकेत सोडविलेल्या प्रत्येक चार चुकीच्या उत्तरांसाठी एका प्रश्नाचे गुण वजा करण्यात येतील

## ताकीढ

ह्या प्रश्नपत्रिकेसाठी आयोगाने विहित केलेली वेळ संपेपर्यंत ही प्रश्नपुस्तिका आयोगाची मालमत्ता असून ती परीक्षाकक्षात उमेदवाराला परीक्षेसाठी वापरण्यास देण्यात येत आहे. ही वेळ संपेपर्यंत सदर प्रश्नपुस्तिकेची प्रत/प्रती, किंवा सदर प्रश्नपुस्तिकेतील काही आशय कोणत्याही स्वरूपात प्रत्यक्ष वा अप्रत्यक्षपणे कोणत्याही व्यक्तीस पुरविणे, तसेच प्रसिद्ध करणे हा गुन्हा असून अशी कृती करणाऱ्या व्यक्तीवर शासनाने जारी केलेल्या ''परीक्षांमध्ये होणाऱ्या गैरप्रकारांना प्रतिबंध करण्याबाबतचा अधिनियम-82'' यातील तरतुदीनुसार तसेच प्रचलित कायद्याच्या तरतुदीनुसार कारवाई करण्यात येईल व दोषी व्यक्ती कमाल एक वर्षाच्या कारावासाच्या आणि/किंवा रुपये एक हजार रकमेच्या दंडाच्या शिक्षेस पात्र होईल.

तसेच ह्या प्रश्नपत्रिकेसाठी विहित केलेली वेळ संपण्याआधी ही प्रश्नपुस्तिका अनधिकृतपणे बाळगणे हा सुद्धा गुन्हा असून तसे करणारी व्यक्ती आयोगाच्या कर्मचारीवृंदापैकी, तसेच परीक्षेच्या पर्यवेक्षकीयवृंदापैकी असली तरीही अशा व्यक्तीविरूद्ध उक्त अधिनियमानुसार कारवाई करण्यात येईल व दोषी व्यक्ती शिक्षेस पात्र होईल.

पुढील सूचना प्रश्नपुस्तिकेच्या शेवटच्या पानावर पहा

विक्षकांच्या सूचनेविना हे सील उघडू नये

कच्च्या कामासाठी जागा/SPACE FOR ROUGH WORK



			•	,,,_
1.	In_	drying, removal of mo	oisture is	s same as the rate of evaporation from
	a fr	ee liquid surface.		
	(1)	Constant rate period	<b>(2)</b>	First falling rate period
•	(3)	Second falling rate period	(4)	All of the above
2.	_	retable seeds having high initial ciently dried in a	moistur	e content and lighter in weight are
	(1)	Solar dryer	<b>(2</b> )	Deep bed dryer
	(3)	Flat bed dryer	(4)	Fluidized bed dryer
3.		is moisture content by	a substa	ace which exerts equilibrium vapour
-	pres	ssure equal to that of pure liquid a		
	(1)	Bound moisture		Unbound moisture
	(3)	Free moisture	4)	Critical moisture
4.		resented by	(2) (4)	our mixture on psychrometric chart is  Vertical line  None of the above
5.		e moisture content at which the d	lrying ra	te ceases to the constant and falling
	(1)	In the moisture content	<b>(2)</b>	Final moisture content
	(3)	Equilibrium moisture content	(4)	Critical moisture content
6.	The	theoretical capacity of screw conve	eyor (Q)	in m <sup>3</sup> /hr is calculated by expression
	(1)	$Q = \frac{(D^2 - d^2)}{47 \cdot 2} \times P \times N$	(2)	$Q = \frac{(D-d)}{36.6} \times P \times N$
	(3)	$Q = 47 \cdot 2 (D^2 - d^2) \times P \times N$	(4)	$Q = 47 \cdot 2 (D - d) \times P \times N$
	whe	ere D = Screw diameter in m;		
		d = Shaft diameter in m;		
		P = Pitch in m;		
		N = Blade speed in rpm		

<b>7.</b>	In pneumatic conveying,									
	(1)	Wide range of material cannot be h	andle	d.						
	(2)	It does not require high power.								
	(3)	(3) The system is not self-cleaning.								
	(4)	The conveying path can be changed	l easil	y.						
8.	Cen	trifugal discharge is used extensivel	y for h	andling small grains in						
	(1)	Belt conveyor	(2)	Chain conveyor						
	(3)	Screw conveyor	<b>(4</b> )	Bucket elegator						
9.	In s	piral separator, round shaped grains	are	oll cted at						
	(1) Inner spirals		(2)	Outer spirals						
	(3)	Intermediate spirals	(4)	None of the above						
10.	The	specific gravity of skim milk is		<del></del>						
	(1)	Lower than whole milk	(2)	Same as whole milk						
	(3)	Higher than whole milk	(4)	Same as water						
11.		assumed that energy required in size reduction is proportional to new surfaces creat d.								
	(1)	Kick	(2)	Rittinger						
	(3)	Bor d	(4)	Fick						
		<u>N</u>								
12.	The	paddy dehusking (sheller) machine	has tw	yo rubber rolls that rotate with						
	(1)	Identical speed in same direction								
	(2)	Identical speed in opposite direction	n							
	(3)									
	(4)	Differential speed in opposite direc	tion							
13.	 Trip	ople point of water occurs at								
	(1)	0·0098°C and 0·64 kPa	(2)	0·0098°C and 64 kPa						
	(3)	$0.98^{\circ}\mathrm{C}$ and $0.64~\mathrm{kPa}$	(4)	0.98°C and 64 kPa						

14.	In deep bed dryers, the drying takes place in a drying zone and the layer of grains is more than cm.								
	(1)	20	(2)	10	(3)	15	(4)	None of the above	
15.	mai	ntain or im	_	•	air thr	rough stored	grain a	at low flow rates to	
	<b>(1)</b>	(1) Fumigation (2) Emulsification							
	(3)	Drying			<b>(4</b> )	Aeration			
16.	The method of using the heat of pasteurized milk to warm up cold incoming miknown as							ld incoming milk is	
	(1)	(1) Heating				Blanching			
	(3)	Homogen	ization		(4)	Regenerati	ion		
17.	The moisture migration into or from a product is dependent on the difference of between atmosphere and product.								
	(1) Vapour pressure				(2)	Absolute p	ressure		
	(3)	Absolute	temperatu	re	(4)	None of the	e above		
18.	alon	type storage structures are cylindrical in shape and made by mud alone or by mud and bamboo.							
	(1)	Morai			(2)	Bukhari			
	(3)	CAP			<b>(4</b> )	None of the	e above		
19.	Hig!	h Tempera	ture Short	Time (HTST) p	asteur	rization occu	rs at	<del> </del>	
	(1)	71·7°C te	mperature	for 15 seconds	(2)	71·7°C tem	peratu	re for 15 minutes	
	(3)	71·7°C ter	mperature	for 30 minutes	(4)	71·7°C tem	peratu	re for 30 seconds	
20.	Dur	•	iice concen ystem.	tration by evap	oratio	on steam eco	onomy (	can be improved by	
	(1)	Single eff	ect		(2)	Multiple ef	ffect		
	(3)	Vacuum			<b>(4</b> )	None of the	e above		
	· · · · · ·		<del></del>	<del></del>	<del></del> -	<del></del>	<del></del>		

A12		$\epsilon$	5	A						
21.	SI e	engines (petrol) develop of rated power on biogas.	_ of rat	ted power, CI engines (diesel) develop						
	(1)	85%, 100%	(2)	100%, 85%						
	(3)	85%, 85%	(4)	100%, 100%						
22.	Biog	Biogas plant delivers a gas which contains mainly								
	(1)	Methane								
	<b>(2</b> )	(2) Carbon-dioxide								
	(3)	(3) Methane plus carbon-dioxide mixture								
	(4)	None of the above								
23.	The	The blade tip velocity of a horizontal axis wind turbine is dependent on								
	(1)	Type of wind turbine								
	(2) The diameter of wind turbine propeller at blade tips									
	(3) Blade pitch angle									
	(4)	All the above parameters mention	ed in (1	), (2) and (3)						
24.	The following is/are indirect method(s) of solar energy utilization:									
	(1)	Windenergy	(2)	Biomass energy						
	(3)	Wave energy	(4)	All of the above						
25.	Nea	arly all electrical energy generated								
	a.	Utilizes steam or hydraulic energy	y.							
	b.	Can be generated at high voltages utilization.	s and tr	ansformed to the voltages required for						
	c.	This type of current flows first direction periodically.	in one	e direction and then in the opposite						
	All these statements are specifically true about									

(2) A.C.

(4) None of the above

(3) Both D.C. and A.C.

(1) D.C.

26.	In solar water pumping system, photovoltaic module can be installed on a fixed array or on a sun tracking system. In this context, following statements are made:											
	a.	<ul> <li>Sun tracking system allows extraction of maximum power produced by PV array.</li> </ul>										
	b. Fixed PV arrays are cheaper than sun tracking system.											
	c.	c. Sun tracking system requires less maintenance.										
	Out	of the above, following $statement(s)$	is/are	true.								
	<b>(1)</b>	Only a and b	(2)	Only b and c								
	(3)	Only a and c	(4)	a, b and								
27.	The	calorific value of bio-gas ranges from	 1									
	(1)	3600 to 5500 kJ/m <sup>3</sup>										
	(3)	16,000 to 25,000 kJ/m <sup>3</sup>	(4)	75,000 to 90,000 kJ/m <sup>3</sup>								
28.	Flat	plate collectors are used for heating	_									
	(1) Solid (2) Liquid											
	(3)	Solid and liquid	(4)	None of the above								
29.	The following statements are considered regarding bio-gas plant:											
	a.	a. Bio-gas is a mixture of methane, carbon-dioxide and nitrogen oxide.										
	b.	b. The digestor of bio-gas plant is normally above ground level.										
	c.	c. The dome serves as a gas holder.										
	Whi	of the above statement(s) is/are co	rrect	?								
	<b>(1)</b>	Only a and b	<b>(2</b> )	Only b								
	(3)	Only b and c	(4)	Only c								
30.		<del>-</del>	•	induction motor of a motor-pump set								
	vary	y proportional to the square of the mo	otor cu	urrent i.e. proportional to I <sup>2</sup> ?								
	(1) Core losses											
	(2) Copper losses											
	(3)	Mechanical losses										
	(4)	All the above losses mentioned in (1	1), (2)	and (3)								

31.	What should be the minimum total area of window opening as compared to floor area of the room?										
	(1)	10%	(2)	20%							
	(3)	15%	(4)	40%							
	The		oors in public build	lings suc	h as hospitals, library etc. is						
	<b>(1)</b>	1 m	(2)	0·8 m	. ^						
	(3)	1·2 m	(4)	1·5 m							
33.		Which of the following fencing is <b>not</b> very effective against the goats and rabbits and also <b>cannot</b> be used for poultry?									
	(1) Electric fencing										
	<b>(2)</b>	(2) Barbed wire fencing									
	(3) Plain wire fencing										
	(4)	None of the above	O								
34.	Unit cost per square feet of any construction work is										
	(1) The total actual cost of completed structure divided by the floor area based on outside cime, sions.										
	<b>(2)</b>										
	(3)	(3) The total actual cost of completed structure plus the floor area based on outside dimensions.									
	(4)	None of the above									
35.	The	most popular covering	material replaceme	ent for gla	ass in case of greenhouse is						
	(1)	FRP									
	(2)	Acrylic									
	(3)	Polyethylene									
	(4)	(4) None of the above									

36.	The capacity of diversion channel should be estimated based on peak runoff									
	(1)		(2)	10	(3)	15	(4)	20		
37.	In c	ase of grasse	d waterv	vay, velocity	of flow do	oes <i>not</i> excee	d			
	(1)	3·2 m/s	(2)	1·0 m/s	(3)	1·8 m/s	(4)	4·0 m/s	_	
38.	For a watershed having 5% land slope and 15 m hor zontal interval, the ve interval will be								vertical	
	(1)	0·50 m	(2)	0·75 m	(3)	1 00 m	(4)	1·25 m		
39.	The	length of co	ntour bu	nd per ha ha	ving heri	ontal interv	al 25 m i	s	_	
	(1)	400 m	(2)	500 m	3)	1000 m	(4)	200 m		
40.	The	consistency	of rainfa	ll is determi	ned by			<del></del>		
	(1) Mass-curve				(2)	Hyetograph	1			
	(3)	Flow-durat	ion curve		(4)	Double-mas	ss curve			
41.	The	The nature of hydrograph depends on the characteristics of								
	(1)	Rair fall an			(2)	Rainfall on				
	(3)	Watershed	only		(4)	None of the	above			
42.	The	assumptions	s of unit.	hvdrograph	 are	<del></del>				
	(1)	-		l time invari						
	(2)	Non-linear								
	(3)	Non-linear	time var	iance only						
	(4)	None of the	above							
43.	Sny	der's method	l is used	to derive the	·					
	(1)	Unit hydro	graph		(2)	Synthetic u	nit hydr	ograph		
	(3)	Dimension	less unit	hydrograph	(4)	Distribution	n graph			
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44. In the land capability Class I type soils, the slope of land is									
	(1)	3 to 5	(2)	5 to 8	(3)	8 to 12	(4)	0 to 1	
45.	Whi	ich of the fol	lowing is	not sedime	ent load ?			<del>_</del>	
	<b>(1)</b>	Bed load			(2)	Siltation le	oad		
	(3)	Saltation l	oad		(4)	Suspende	l load		
46.	The	K-factor in	USLE is	measured o	on unit plo	t of size			
	<b>(1)</b>	22 m long	with 9% s	lope	(2)	44 m long	with 12%	slope	
	(3)	50 m long	with 15%	slope	(4)	60 m long	with 20%	slope	
47.		ty	pe of gull	ies are gen	erally four	d in the all	uvial plai	ns, where surface	
	and sub-surface soils are easily erodible.					<b>V</b> -'			
	<b>(1)</b>	U-shaped			2)	V-shaped			
	(3)	L-shaped			(4)	W-shaped			
48.	Nash model is associated to								
	<b>(1)</b>	IUH			(2)	SUHG			
	(3)	Distributio	n HHG		(4)	All of the a	above		
49.		is the naterial bouncing along the bed or moving directly or indirectly							
	by t	he impact of							
	<b>(1)</b>	Contact los	ad		(2)	Saltation l	oad		
	(3)	Suspended	load		(4)	Bed load			
50.		of t	he water	shed repre	esents the	yield of sed	iment rat	e from the entire	
	wat	ershed area.							
	(1)	The outlet			(2)	The Ridge	line		
	(3)	The high e	levation p	ooint	(4)	None of th	e above		
51.	The	sediment sa	mpler sh	ould be kep	pt in	pos	sition fron	n the stream bed.	
	<b>(1)</b>	Horizontal			(2)	Vertical			
	(3)	Parallel			(4)	None of th	e above		

<b>52.</b>		t hydrograph method is <i>not</i> suit ershed area of	able for t	he estimation of surface runoff from a
	(1)	$< 25 \text{ km}^2 \text{ and } > 5000 \text{ km}^2$	(2)	< 25 ha and > 5000 ha
	(3)	< 25 acre and > 5000 acre	(4)	< 15 km <sup>2</sup> and > 10,000 km <sup>2</sup>
53.	The	e intensity of moderate rainfall is		
	(1)	2·5 cm to 7·5 cm/hr	(2)	2.5 mm to 7.5 mm/hr
	(3)	7·5 mm to 10 mm/hr	(4)	7-5 cm to 10 cm/hr
54.	whe	is the most successful en the stream takes a sharp bend	<b>⊿</b>	controlling the stream bank erosion,
	(1)	Brushwood edging	(2)	Brushwood rollers
	(3)	Stone revetment	(4)	None of the above
55.	_	per IMD norms, in plain area ain		·
	(1)	250 km <sup>2</sup>	(2)	$450 \text{ km}^2$
	(3)	520 km <sup>2</sup>	(4)	1200 km <sup>2</sup>
<b>56.</b>	The	kinetic energy of raindrop depen	ds on	
	<b>(1</b> )	Drop size	(2)	Rainfall intensity
	(3)	Both (1) and (2)	(4)	None of the above
57.	Chu	ate spillways are located at the dr	op height	of
	(1)	1 to 2 m	(2)	0·5 to 1 m
	(3)	5 to 6 m	(4)	All of the above
58.	USI			
	(1)	An empirical equation	(2)	A theoretical equation
	(3)	Both (1) and (2)	<b>(4</b> )	None of the above
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<b>59.</b>	Bro	ad-base te	erraces are n	nade on	lands upto _		_ percent lai	nd grade only.
	(1)	10	(2)	15 	(3)	20	(4)	22
60.	Wh	ich of the	following te	rms is <b>n</b> e	ot related to	basin sha	ape ?	
	(1)	Form fa	ctor		(2)	Circula	tory ratio	
	(3)	Elongat	ion ratio		(4)	Draina	ge density	
61.	For	estimatir	ng erosivity f	rom rain	ıfall data		method/s is/	are used.
	(1)	EI 30 in	dex method		(2)	KE > 2	5 index meth	od
	(3)	Both (1)	and (2)		(4)	Rationa		
62.	Soil	erodibilit	y (E) is esti	nated by	7	1	_	
	(1)	$E = \frac{\% S}{}$	Sand + % Silt % Clay	<u>;</u>	(2)	$\mathbf{E} = \frac{1}{\% s}$	% Clay Sand + % Sile	<del>_</del>
	(3)	$\mathbf{E} = \frac{\% \mathbf{C}}{\mathbf{C}}$	Clay + % Silt % Sand		(4)	$\mathbf{E} = \frac{\%  S}{\%}$	Sand Clay	
63.	In t	_	ss of sodime	enta/10n,	which type	s of part	ticles are tra	ansported by bed
	(1)	Silt, da	y and sand		(2)	Only cla	ay	
	(3)	Only sil			(4)	Sand, g	ravel and ro	ck particles
64.		design o	f grassed w	aterway	s the value	of rough	ness coeffici	ent 'n' is usually
	(1)	0.04			(2)	0.02		
	(3)	0.08			(4)	All of th	ne above	
<b>65.</b>		National	l Watershed	Develo	pment Proje	ct for Ra	infed Areas	(NWDPRA) was
	(1)	1973 – 7	74 (2)	1977 –	78 (3)	- 1986 –	87 (4)	1983 – 84

66.	The hydrostatic law states that the rate of increase of fluid pressure in a vertically downward direction is equal to at that point.									
	(1)	Density of the fluid	(2)	Specific weight of the fluid						
	(3)	Weight of the fluid	(4)	Volume of the fluid						
<del></del>	Hyd	lraulic gradient line is the line	which give	es the sum of of a flowing						
	fluid	d in a pipe.								
	a.	Pressure head								
	b.	Velocity head								
	c.	Datum or elevation head								
	Ans	swer Options :								
	(1)	(1) Only a and b (2) Only a and c								
	(3)	Only b and c	(4)	All of the above						
•	a. b. c. Ans (1) (3)	Bottom width must be equal to Half of the top which must be Hydraulic mean depth must be swer Options.  Only a and b Only hand c	equal to on	e of the sloping sides of the channel						
69.		ch one of the following dischar	ge measuri	ng devices operates efficiently on very						
	(1)	V-notch	(2)	H-flume						
	(3)	Cut-throat flume	(4)	Parshall flume						
 70.	 The	parallelism of advance and reco	ession curv	es denote						
	(1)	•								
	(2)									
	(3)	o e								
	(4) None of the above									
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- 71. The critical parameter(s) related to clogging susceptibility of drippers is/are
  - (1) Site of the flow passage
  - (2) Velocity of water through the flow passage
  - (3) Both (1) and (2)
  - (4) None of the above
- 72. In evaluation of sprinkler irrigation, if,

m = average value of application rate,

n = number of observations

X = numerical deviation of observation from average value then, uniformity coefficient,  $C_n$  is

(1)  $C_u = 100 \left( 1.00 - \frac{\Sigma X}{m.n} \right)$ 

(2)  $C_{\rm u} = \left(100 - \frac{\Sigma X}{\rm m.n.}\right)$ 

(3)  $C_u = 100 \left( 1 - \frac{\Sigma X}{m.n} \right)^2$ 

(4)  $C_u = 100 \left[ 1 - \left( \frac{\Sigma x}{m.n} \right)^2 \right]$ 

- 73. In Kennedy's regime equation,  $V = 0.55 \text{ mD}^{0.64}$  where m represents
  - (1) Side slope of channel
- (2) Bed slope of channel
- (3) Hydraulic radius of channel
- (4) Critical velocity ratio
- 74. The drainage water intercepting the canal can be disposed of
  - a. By passing the canal over the drainage
  - b. By passing the canal below the drainage
  - c. By passing the drain through the canal
  - d. By aligning the canal parallel to the drain

### **Answer Options:**

(1) All of the above

(2) Only a, b and c

(3) Only a and b

- (4) Only a
- 75. If B is base period of a crop in days, the relationship between duty (D) in hectares/cumec and delta ( $\Delta$ ) in cm, is expressed as
  - $(1) \quad \Delta = \frac{864 \text{ B}}{D}$

 $(2) \quad B = \frac{864 \ \Delta}{D}$ 

 $(3) \quad D = \frac{864 \ \Delta}{B}$ 

 $(4) \quad \Delta = \frac{864 \text{ D}}{\text{B}}$ 

76.	In gridiron type of composite pipe drain systems and patterns,									
	a.	Laterals are perpendicular to the	collecto	r						
	b.	Laterals enter the collector at a sharp angle								
	Ans	swer Options :								
	(1)	Only a	(2)	Only b						
	(3)	Both a and b	(4)	None of the above						
77.	Drawdown at any instant is the difference between									
	<b>(1)</b>	(1) Static water level and ground level								
	<b>(2</b> )	(2) Pumping water level and ground level								
	(3)	(3) Pumping water level and impermeable level								
	(4)	Static water level and pumping w	ater lev	el						
78.	_	A permeable bed, only partly filled with water and overlying a relatively impervious layer is called								
	(1)	Semi-confined aggister	(2)	Confined aquifer						
	(3)	Unconfined aqu'fer	(4)	Artesian aquifer						
79.	Tractor drawn straper									
	a.	Scops the soil and dumps the soi	I							
	b.	Cuts to grade, hauls the load and	spreads	s the soil						
	C.	Digs the soil and throws away								
	Ans	swer Options :								
	(1)	Only a	<b>(2)</b>	Only b						
	(3)	Only c	(4)	All of the above						
80.		ich one of the following structures al system?	s is <i>no</i> :	$m{t}$ cross drainage work constructed on						
	(1)	Cantilever skimming platform	(2)	Level crossing						
	(3)	Super passages	(4)	Syphon						
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- 81. Labour peaks in transplanting of paddy can be managed by
  - a. Increasing the working hours
  - b. Extending the time period of operations
  - c. Adjusting the cropping pattern
  - d. Mechanizing the operations
  - e. Decreasing the intensity of some operations

#### **Answer Options:**

(1) All are correct

- (2) All are incorrect
- (3) Only a, b and c are correct
- (4) No relevance to labour peaks
- 82. In an ideal Otto cycle, the adiabatic process of compression is followed by
  - (1) Constant pressure heat addition
  - (2) Constant volume heat addition
  - (3) Constant pressure heat rejection
  - (4) Constant volume heat rejection
- 83. Valve timing for opening and closing in IC engines is
  - (1) Advanced and delayed with increase in the engine speed
  - (2) Delayed and advanced with decrease in the engine speed
  - (3) Always a same time as top dead centre and bottom dead centre position of
  - (4) Same for slow speed and high speed engines
- **84.** a. Power brakes are generally used on large size tractors.
  - b. Brakes must give positive control when the pedals are pressed.
  - c. Air bubbles in the hydraulic line would indicate soft braking action.

#### **Answer Options:**

- (1) Only a and b are correct
- (2) Only a and c are correct

(3) All are correct

(4) All are incorrect

A		17						A12	
85.	If number of teeth on the driven gear are doubled without changing number of teeth on the driver gear, what will be the new speed ratio if the original speed ratio is 2:1?								
	(1)	4:1	(2)	1:4	(3)	1:2	(4)	1:1	
86.	a. In wet land for paddy cultivation shoes have more flat sections.								
	b.	For general ploughing in dry lands shoes are of triangular cross-section.							
	c.								
	Answer Options:								
	(1) c is incorrect			(2)	All are c	orrect			
	(3)				(4)	a is inco	rrect		
87.		s machine con wheels, cover Power tiller Thresher				ical convey Mower		ow divid	ers with
88.	The function of governor in the tractor engine is to								
	a.	a. Increase the speed of engine under increased load condition.							
	b.	b. Decrease the speed of engine when load decreases.							
	c.	c. Pegulate the fuel supply.							
	Increase the speed of engine when load decreases.								
	Answer Options:								
	<b>(1)</b>	Only a and b	)		(2)	Only a a	nd c		
	(3)	Only a, b an	d c		(4)	Only c a	nd d		
89.	This type of cell plate is widely used for maize planting and in this plate risk of crushing unevenly sized seed is greater.								
	(1)	Horizontal p	late		(2)	Vertical	plate		

**(4)** 

Cup type

Inclined plate

(3)

90.	does not get entangle in plants during dusting.								
	(1)	Knapsack type	(2)	Plunger type					
	(3)	Belly type	(4)	Rotary type					
91.	Which of the following things are <i>true</i> for hydraulic brake system?								
	a.	Force required to apply brake is less than mechanical brake.							
	b.	Brake fluid used is caster oil and denatured alcohol.							
	c.	Brake fluid used is glycerine and alcohol.							
	$\mathbf{d}.$	Force is transmitted to all wheels in equal magnitude.							
	Answer Options:								
	(1)	Only a, b and d	(2)	Only a and d					
	(3)	Only a, b and c	(4)	All of the above					
92.	calle (1) (3)		(2) (4)	ge of disc is inclined to vertical line  Disc angle  Caster angle					
93.	It is also called valve lifter, it raises or lowers the valves and receives motion from the cams, nounted on the camshaft.								
	<b>(1)</b>	F ish rod	<b>(2)</b>	Rocker arm					
	(8)	Tappet	(4)	All of the above					
94.	Fiel	d efficiency of any machine is	the function						
	a.								
	b.	Depth of operation							
	c.	Speed of operation							
	d.	Shape of field							
		wer Options:							
	(1)	Only a and b	(2)	Only a, b and c					
	(3)	Only a, c and d	(4)	All of the above					
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95.	Cell fill is affected by								
	<b>(1)</b>	Seed size	(2)	Cell speed					
	(3)	Cell size	(4)	All of the above					
96.	The energy of the engine is converted into heat by a set of rotating cups, turning								
		next to a set of stationary vanes in							
	<b>(1)</b>	Hydraulic dynamometer	(2)	Electrical dynamometer					
	(3)	Spring dynamometer	(4)	Prony brake dynamometer					
97.	In seed drill calibration, following parameters are determined and adjusted								
	a.								
	b.								
	c.								
	d.								
	Answer Options:								
	<b>(1)</b>	Only a	(2)	Only a and b					
	(3)	Only a, b and c	(4)	All of the above					
98.	The nozzle used for chemical spraying of weedicides is								
	<b>(1)</b>	Hollov cone nozzle	<b>(2)</b>	Flat fan nozzle					
	(3)	Solia cone nozzle	(4)	Flooding nozzle					
99.	In this system, the frequency of explosions of engine are regulated and is mostly used on gas engines.								
	<b>(1)</b>	Throttle system	(2)	Hit and miss system					
	(3)	Hydraulic governor	(4)	Centrifugal governor					
100.	Dur	ing suction spoke the pressure insi	de the e	ngine cylinder is					
	(1)	During suction spoke the pressure inside the engine cylinder is  (1) Below the atmospheric pressure							
,	(2)								
	(3)								
	(4)	• -							

# सूचना — (पृष्ठ 1 वरून पुढे....)

- (8) प्रश्नपुस्तिकेमध्ये विहित केलेल्या विशिष्ट जागीच कच्चे काम (रफ वर्क) करावे. प्रश्नपुस्तिकेव्यतिरिक्त उत्तरपत्रिकेवर वा इतर कागदावर कच्चे काम केल्यास ते कॉपी करण्याच्या उद्देशाने केले आहे, असे मानले जाईल व त्यानुसार उमेदवारावर शासनाने जारी केलेल्या "परीक्षांमध्ये होणाऱ्या गैरप्रकारांना प्रतिबंध करण्याबाबतचे अधिनियम-82" यातील तरतुदीनुसार कारवाई करण्यात येईल व दोषी व्यक्ती कमाल एक वर्षाच्या कारावासाच्या आणि/किंवा रुपये एक हजार रकमेच्या दंडाच्या शिक्षेस पात्र होईल.
- (9) सदर प्रश्नपत्रिकेसाठी आयोगाने विहित केलेली वेळ संपल्यानंतर उमेदवाराला ही प्रश्नपुस्तिका स्वत:बरोबर परीक्षाकक्षाबाहेर घेऊन जाण्यास परवानगी आहे. मात्र परीक्षा कक्षाबाहेर जाण्यापूर्वी उमेदवाराने आपल्या उत्तरपत्रिकेचा भाग-1 समवेक्षकाकडे न विसरता परत करणे आवश्यक आहे.

	नमुना प्रश्न
Pick out the	correct word to fill in the blank :
Q.No. 201.	I congratulate you your grand success.
	(1) for (2) at
	(3) on (4) about
	्रह्मा प्रश्नाचे योग्य उत्तर ''(3) on'' रसे आहे. त्यामुळे या प्रश्नाचे उत्तर ''(3)'' होईल. यास्तव
	खालीलप्रमाणे प्रश्न क्र. 201 सद्योगील उत्तर-क्रमांक ''③'' हे वर्तुळ पूर्णपणे छायांकित करून दाखविण
	आवश्यक आहे.
प्र.क्र. 201.	1 2 6
	अशा पद्धतीने प्रातुत प्रस्तुन्ति तील प्रत्येक प्रश्नाचा तुमचा उत्तरक्रमांक हा तुम्हाला स्वतंत्ररीत्या पुरविलेल्या
	उत्तरपत्रिकेवर <u>िक त्या त्या प्रश्नक्रमांकासमोरील संबंधित</u> वर्तळ पर्णपणे छायांकित करून दाखवावा, <b>ह्याकरिता</b>

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फक्त बाळ्या गाइचे बॉलपेन वापरावे, पेन्सिल वा शाईचे पेन वापरू नये.