

**SEMESTER END THEORY EXAMINATION****B. Sc. (Hons.) Agri.****Model Answer**

Semester	:	III (New)	Term	:	I	Academic Year	:	2020-21
Course No.	:	ENGG-232	Title	:	Farm Machinery and Power			
Credits	:	2(1+1)						
Day & date	:	21.01.2021	Time	:	2.00 Hr	Total Marks	:	40

**Note:**

- 1) Solve ANY FOUR questions from SECTION -A
- 2) Solve ANY SIX questions from SECTION-B
- 3) All questions from SECTION-C are compulsory
- 4) Send the PDF file of answer sheet to the email id of respective course teacher

**SECTION-A****Write the answers in 4-5 sentences only. Each question carries 4 marks**

Q.1	Write any four qualities of good lubricants.
	<p>A good lubrication should have the following qualities</p> <ol style="list-style-type: none"> <li>i) It should have sufficient viscosity to keep the rubbing surfaces apart</li> <li>ii) It should remain stable under changing temperature</li> <li>iii) It should keep lubricated parts clean</li> <li>iv) It should not corrode metallic surfaces.</li> </ol>
Q.2	What are the main functions of cultivator?
	<ol style="list-style-type: none"> <li>i) Interculture the field</li> <li>ii) Destroy the weeds in the field</li> <li>iii) Aerate the soil for proper growth of crops</li> <li>iv) Conserve moisture by preparing mulch on the surface</li> <li>v) To sow seeds when it is provided with sowing attachments</li> <li>vi) To prevent surface evaporation and encourage rapid infiltration of rain water into the soil.</li> </ol>
Q.3	Explain the term horizontal suction.
	It is the maximum clearance between the landslide and a horizontal plane touching point of share at its gunnel side and heal of landslide. This section helps the plough to cut the proper width of furrow slice.
Q.4	Explain how cropping pattern and soil condition are necessary factors for selection of tractor.
	<p>Selection of tractor depends on the following factors</p> <ol style="list-style-type: none"> <li>i. <b>Cropping pattern</b>-Generally 1.5 ha/4phas been recommended where adequate irrigation facilities are available and more than one crop is taken. So a 30-35 hp tractor is suitable for 40 ha farm.</li> <li>ii. <b>Soil condition</b>- A tractor with less wheel base, higher ground clearance and low overall weight may work successfully in lighter soil but it will not be able to give sufficient depth in black cotton soil.</li> </ol>

Q.5	What is mean by registration of Mower.	
	When the knife section stops in the centre of its guard on every stroke i. e. the centre of the knife section is at the centre of the guard when it is in operating condition, it is called as registration of mower.	
<b>SECTION-II</b>		
(Write the answers in one sentence only. Each question carries 2 marks)		
Q.6	(Define the following terms)	
	a)	Brake Horse Power
		It is the useful output power of an engine measured at the flywheel.
	b)	Ultra Low Volume sprayer.
		It is defined as plant protection operation in which total volume of liquid applied amount to a few millilitre per acre. It is mainly used in air craft spraying.
	c)	Scavenging
		The process of removal of burnt or exhaust gases from the engine cylinder is known as scavenging.
	d)	Stroke
		The linear distance travelled by the piston from top dead centre to bottom dead centre is called as stroke
	e)	Firing Interval
		The interval between successive power strokes in different cylinders of the engine is called as firing interval
	f)	Disc Angle
		It is the angle at which the plane of the cutting edge of the disc is inclined to the direction of travel in the plough.
	g)	Calorific value
		The heat liberated by combustion of a fuel is known as calorific value.

Q. 7	Multiple Choice Questions				
	1.	Gunnel is the vertical face of the share which slides along the furrow wall in Mould Board Plough.			
		a)	Gunnel	b)	Wings of share
		c)	Slip share	d)	Cleavage edge
	2.	Tilt angle varies between 15 to 25°.			
		a)	15 to 25°	b)	25 to 30°
		c)	10 to 15°	d)	30 to 40°
	3.	Knocking is the violent noises, heard in an engine, giving a pinging sound during the process of combustion.			
		a)	Volatility	b)	Calorific value
		c)	Cetane Number	d)	Knocking
	4.	Coulter is a device used to cut the furrow slice vertically from the land ahead of the plough bottom.			
		a)	Jointer	b)	Frog

		c)	Coulter	d)	Land Slide
	5.	<b>Swirl Plate</b> is the part of a cone nozzle in sprayer which imparts rotation to liquid passing through it.			
		a)	Nozzle cap	b)	Swirl plate
		c)	Spray boom	d)	Spray gun
	6.	Outset disc harrow consists of two gangs in tandem.			
		a)	Three	b)	Two
		c)	One	d)	Four
	7.	<b>Wheel hoe</b> is a hoe with one or two wheels.			
		a)	Hand	b)	Wheel
		c)	Grubber	d)	None of above
	8.	The diameter of cylinder is known as bore.			
		a)	Bore	b)	Swept volume
		c)	Stroke	d)	None of above
	9.	<b>Back furrow</b> is a raised ridge, left at the centre on a strip land, when ploughing is started from centre to side.			
		a)	Dead furrow	b)	Back furrow
		c)	Head land	d)	None of above
	10.	<b>Duster</b> is a machine to apply chemical in dust form.			
		a)	Sprayer	b)	Duster
		c)	Puddler	d)	None of above
	11.	<b>Power tiller</b> is a prime mover in which the direction of travel and its control for field operation is performed by the operator walking behind it.			
		a)	Harrow	b)	Plough
		c)	Power Tiller	d)	Subsoiler
	12.	Herbage crops are cut by using mower.			
		a)	Reaper	b)	Mower
		c)	Picker	d)	None of above