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SEMESTER END THEORY EXAMINATION
B.Sc. (Hons.) Agriculture

Semester	**:** III (New)	**Term: I**	**Academic year: 2020-2021**
Course No	**:** AGRO-234	**Title :**	Crop Production Technology 1
Credits	**:** 2(1+1)		Kharip Crops
Day and Date	**:** Saturday 16.01.2021	**Time: 12.00to13.00**	**Total Marks: 40**

	SECTION "A" **(Write the answers in 4-5 sentences only. Each question carries 4 marks)**	**16**
Q. 1	**Give the cultivation practices of kharip sorghum on following points** **a) Soil and Climate b) Control measures of Parasitic weeds** **Ans.: a) Soil and Climate** - **Climate: -** It is purely a tropical crop, during Kharif, it is cultivated in areas where the annual rainfall is 600 to 1000 mm usually distributed between last week of June to the first week of Sept. The average temp.during the growing season should 26oc to 32oc.It can tolerate with minimum Temp 16oc and maximum Temp 40oc. It is a drought resistant crop. It regulates transpiration and remains dormant during the drought period and start active growth when the moisture status of the soil improves. Excessive soil moisture as well as prolonged drought are harmful for crop growth - **Soil:-**Medium to deep black soils are predominantly suitable for growing sorghum. In areas where there is assured rainfall it can be cultivated on light soil. It tolerates saline and alkaline condition of the soil up to some extent (pH 6.0 to 8.5). - **b) Control measures of Parasitic weeds**	
Q. 2	**Describe the .cultivation practices of Rice on following points** **a) Weed management b) Nursery Management** **Ans.: a) Weed management** **Weed management**: - There is less problem of weeds in transplanted paddy. Weeds should be removed first at 20 days after transplanting. The herbicides found effective in controlling annual weeds... - 1. Propanil (stomp f-34):- spray herbicide @ 3 Kg a i /ha 6 to 8 days after transplanting. Remove all water before spraying of herbicide. The field should be flooded again within 24 to 48 hrs. - 2. Butachlor: - Pre emergence @ 2 kg a i /ha or granules @ 50 Kg/ha in standing water. - 3. Fluchoralin (Basalin):- spray solution @ 1 Kg a I/ha or broadcast 50 – 60 Kg /ha granules. - 4. Nitrofen (TOK E – 25):- used as Pre emergence @ 2 kg a i /ha or broadcast 20 – 25 Kg /ha granules within 2 to 3 days after transplanting.	

	- 5. Oxydiagryl - (Raft 6%EC, Topstar 80wp) – pre-emergence application for nursery and dry cultivation. - **b) Nursery Management** **1. Wet Nursery**-This method of seedling rising is preferred under irrigated condition. Frequently ploughed field is puddled in standing water. Organic manures i.e. about 10-20 tons of FYM or 8-10 tons of green manure is applied and mixed at puddling.The nursery area is brought to fine soft puddle. Area is divided in two small beds of 1.25 m width and with suitable length according to slope. Prepare a drain furrow of 30 cm, width between two beds to facilitate drainage of excess water, sowing, weeding, spraying and irrigation also. Apply 5 kg urea + 10 kg. Ammonium Sulphate + 5 kg. SSP per 100 sq.m. Area. The beds are then leveled and about 3-4 cm standing level of water is allowed in bed. Sprouted seeds are used for sowing on these beds. 25 to 30 kg seeds is sufficient for 0.10 ha Nursery and this nursery is sufficient for transplanting of one ha field. Keep the seed bed saturated with water for first five days and then increase gradually the level of water up to 5 cm. Drain out excess water when there is heavy rainfall. 2. Dry Nursery-This method is adopted where availability of water is limited to grow seedlings. Field is brought in to fine tilth by adding 20- 25 tons of FYM/ha and then ploughing – harrowing- clod crushing. Remove the stubbles and make nursery area clean. Open water/drain channel of 50 cm width all around the bed, for watering, intercultural and drainage of excess water. Prepare Raised Beds of 120 cm width and 10- 15 cm. height with convenient length (6 to 7.5 m.). In Chandrapur and Bhandara Districts, due the late onset of monsoon the seedling are raised in fat beds to conserve moisture. The seeds are sown (@ 25-30kg/ 10 R (which is sufficient to transplant 1 ha) at onset of monsoon at 10 cm apart in line in the soil at 2-3 cm depth.2 kg ammonium sulphate and 1 kg urea is	
Q. 3	**Explain the cultivation practices for Maize on following points** a) **Seed and sowing** **b) Nutrient management** a) **Seed and sowing** - **Methods of sowing :-** - 1. Drilling - 2. Dibbling on ridges and furrow - 3. Putting the seed in plough furrow - Spacing :- - Mid late to late varieties- 75 X 20 to 25 cm - Early and very early varieties - 60 X 22.5 cm - Fodder – 30 X 10 cm - Depth of sowing :- Not more than 5 cm - **Seed Rate** :- Grain - 15-20 Kg /ha - Fodder - 75 Kg / ha **b) Nutrient management** Maize is heavy feeder crop.Add 12-15 tones of FYM/Compost at last harrowing. • Apply NPK @ 90:40:40 for rain fed crop. • Apply NPK @ 120:60:40 for irrigated crop. • Apply NPK @ 120:40:20 for fodder crop. (80kg N+ full dose of P and K at sowing and 40kg. N at 30DAS) • For grain crop apply 1/3rd dose of N and full dose of P and K should be	

applied at sowing.

- 1/3rd dose of N at 30 DAS.
- 1/3rd dose of N at 50 DAS.
- Zink Sulphate @ 25kg/ha (If deficiency observed)

Q. 4 **Describe the cultivation Practices of soybean on following points**

a) Varieties **b) harvesting and yield**

Ans.: a) Varieties

Name	Duration (Days)	Av. Yield (q/ha)
MACS-58	90-100	25-35
MACS-124	90-100	25-35
JS-335	90-95	25-35
PK-1029	95-100	35-40
MACS-450	90-95	25-35
DS-228 (Phule Kalyani)	90-95	30-35

Harvesting - At maturity leaves, stem and pods turn yellow also the defoliation of leaves started at this stage. The pods dry out quickly. The late harvesting leads to less yield due to pod cracking. The quality of the grain is spoil if harvesting is done early. The plants are cut and keep for drying 5 to 10 days in threshing yard and with the help of stick the grains are separated or threshing is done by using power thresher. After necessary drying the grains can be stored in gunny bags in cool and dry place.

Yield: average yield is about 30-35qtls/ha

Q. 5

Give the Scientific name, Family, Sowing time, Spacing & Seed rate of any two of the following crops.

Crop	S.N.	Family	Sowing time	Spacing	Seed rate
a)Hybrid Napier	***Pennisetum purpureum***	**Poaceae**	June-July, Feb- March	90x60 cm	40,000 root stalks/ha
b) Pearl Millet	***Pennisetum glaucum***	**Poaceae**		45 x 10 cm or 45 x 15 cm	Hybrid varieties – 2.5 to 3 Kg /ha. local - 5 Kg /ha.
c) Cowpea	***Vigna sinensis***	**Leguminoseae**	*kharif* -second fortnight of June -first week of July, and March to April for the *summer* season. In hilly areas crop is sown in April- May for green manuring	a) 30 X 10 cm b) 45 X 10 cm	grain or vegetable - 20 to 25 Kg /ha. fodder - 35 to 45 Kg /ha

SECTION-B	
(Write the answers in one sentence only. Each question carries 2 marks)	
Q. 6	(Answer in one sentence)
a) In pulses crops which bio fertilizer is used for N fixation? **Ans: Rhizobium**	
b) Write down the botanical name of Proso millet. **Ans: *Panicum miliaceum L.***	
b) Give the origin of Sorghum. **Ans: Africa**	
c) Write down the botanical name of Blackgram. **Ans: *Vigna mungo***	
d) What is the protein content in Soybean? **Ans: 40%**	
c) Which crop is called as poor man's food? **Ans:Pearl millet (BAJRA)**	
d) Which crop is called as queen of cereals? **Ans: Maize**	

SECTION-C				
(Choose the correct option. Each question carry 1 mark)				
Q. 7	**1)** Golden Rice contains vitamin___ **A**___			
	a)	B	b)	**A**
	c)	D	d)	C
	2) Brazil is the origin of Groundnut			
	a)	**Brazil**	b)	Nepal
	c)	India	d)	Sri-Lanka
	3) Family of cotton is Malvaceae			
	a)	Gramineae	b)	Leguminaceae
	c)	Poaceae	d)	**Malvaceae**
	4) Protein content in Pigeon pea is **22-23** per cent.			
	a)	9-10	b)	**22-23**
	c)	15-18	d)	29-32

	5) **Cotton** crop is known as King of fibre.			
	a)	Bajra	b)	**Cotton**
	c)	Soybean	d)	Green gram
	6) ***Paspalum scrobiculatum*** is the botanical name of Kodo millet.			
	a)	***Paspalum scrobiculatum***	b)	*Sesamum indicum*
	c)	*Phaseolus mungo*	d)	*Panicum miliaceum*
	7) Origin of Greengram is **India**			
	a)	Africa	b)	**India**
	c)	China	d)	Nepal
	8) Carbohydrate content in Sorghum crop is **70 per** cent.			
	a)	67	b)	57
	c)	47	d)	**70**
	9) **JS 335 is a variety of Soybean**			
	a)	**JS 335**	b)	Saburi
	c)	Shanti	d)	Samrudhi
	10) Seed rate of Sesame is **7 to 10**kg/ha			
	a)	2.5 to 3	b)	5 to 7
	c)	**7 to 10**	d)	12 to 15
	11) Cotton seed is treated with **H2SO4**			
	a)	CaSO4	b)	**H2SO4**
	c)	FeSO4	d)	MgSO4
	12) Fertilizers dose of Jute crop is **60:30:30**kg NPK /ha			
	a)	**60-30-30**	b)	30-30-30
	c)	90-30-30	d)	80-30-30

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