RDL 730 "TECHNOLOGY ALTERNATIVES FOR RURAL DEVELOPMENT"

MAJAOR EXAM

8-5- 07

Max. Marks= 45

Time= 2 hours

Note: Attempt All i.e. Part A, Part B and Part C

Part A

Q. 1. Attempt any **Four** of the following

(a)Write your understanding of holistic health. Did you get any inspiration /disagreement with Dr. Dossey's work. Explain briefly

(b) Write (point wise) 5 important revelations of SAP.

(c) Explain the relevance of infusing values in R & D work for technology development.

(d) Write (point wise) basic difference between Gaia, SAP and Darwinism.

(e) Write your own experience of Body- Jeevan bond. How it helps in visualising the correct *swaroop* of technology? **(8)**

Q. 2. Attempt any **Four** of the following

(a) Identify 5 most critical parameters for the assessment of a desirable industrial system. Does G-K system meets this criterion?

(b) Explain Natural Engineering and its relevance in modern technical education system.

(c) Write your understanding of *Swadeshi*. List its various scenarios. How *Swadeshi* can handle the implications of globalisation?

(d) Is there any need of re defining 'Technology' and 'Efficiency'? Explain briefly

(e) List major technical flaws in G R system (agriculture). Write unique features of

(i) Natural farming **or** Pesticide free farming

(ii) NADEP composting

(iii) Paddle Operated Paddy Thresher. **(8)**

(P.T.O)

Part B

Q.3. Compare the annual production of steel with that of bamboo with reference to the total quantum possible in India, investments needed, impact on environment and livelihood dislocation/generation among the people in the field.

Comment on the possibilities of village enterprises in producing the materials.

Mention the possible applications of bamboo in your areas of specialization along with future R & D areas. **(5)**

Q.4. Assume a) Solar energy that falls per sq.m in a sunny region of our country is about 2200 kW.hr per year. b) Fodder grasses convert this into energy of the fodder at a photosynthetic efficiency of 1%. c) Feeding on this fodder, cattle can convert about 10% of the energy in the fodder into mechanical energy through their muscles.

i) Estimate the mechanical energy that the cattle can generate by feeding on the fodder grass from 1 sq.m of land over 1 year.

ii) If cattle generate the above mechanical energy in about 2200 hours over one year, estimate the average mechanical power that the cattle can develop from feeding on the fodder raised over one hectare of land. (1 hectare has 10000 sq.m)

iii) Compare the power generation through cattle muscle route with the current system of thermal power generation in terms of making the power available in the rural areas, global warming, optimal utilization of available resources. **(5)**

Q.5. i) What is IPCC? Mention the salient features of its 2007 report.

ii) If one tonne of steel is replaced in structural use by 1 tonne of bamboo, the possible reduction of CO2, is about 5 tonnes. Carbon trading can possibly generate revenue of about US $12 per tonne of reduced emission of CO_2. Estimate the possible benefit to grow every tonne of bamboo that replaces 1 tonne of steel and compare it to the about Rs.3500/-per tonne of bamboo cost. **(3)**

(P.T.O)

Part C

Q.6. What are the principal characteristics of Traditional Technologies or *lokavidyas?* Discuss the organization and knowledge components of the Handloom Industry in India.

OR

From time immemorial, rural communities have been utilizing traditional technologies for converting natural resources (metal, mud, earth, wood, stone, cloth etc) to commodity products.

(a) Examine any one of the sectors of commodity production over the last 300 years (1700-2000) with respect to changes in technology & changes in ownership of natural resources.

(b) What are the implications of these changes for the communities involved in commodity production? **(8)**

Q.7. (a) In the context of Rural Development, what is the central message of the film "Village Republics" ?

(b) Discuss how "Gross Nature Product" reflects realities of rural life more closely than "Gross Domestic Product"

(c) Discuss the constraints to increased food grain production in India.

(d) Suggest technology measures to ensure sustainable food security for the Indian population. **(8)**

----- All the Best -----