APPENDIX - I

ENGLISH VERSION OF THE INSTRUMENTS:

I.	PERSONAL DATA SHEET	
II.	QUESTIONNAIRE ON PERCEPTION EDUCATION	REGARDING ENVIRONMENTAL
III.	ENVIRONMENTAL KNOWLEDGE INVEN	TORY
IV.	ENVIRONMENTAL ATTITUDE SCALE	
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Ι.	PERSONAL DATA SHEET	
1.	Name of the School/College	·
2.	Name of the Pre-service/ In-service teacher	:
3.	Sex-(Male/Female)	:
4.	Age (In years)	:
5.	Teaching Experience (Put a tick (✓) mark	<u> </u>
	in the appropriate box)	Nil Less than 5-10 More than 5 years years 10 years
6.	Place of residence (Put a tick mark)	: Urban/Rural area
7.	General Academic Qualification	: B.A./B.Sc./M.A./M.Sc./

B.Com./M.Com.

(Put a tick mark)

Other qualification, if any (specify)

8. Subjects taught at School :

9. Socio-economic background information (pre-service teachers)

Education of parents
(Put a tick mark)

Education

Father

Mother

Illiterate

Primary Education
Secondary Education
Graduation
Post-Graduation

b. Occupation of parents with their designation if any:

Occupation Designation

Father

Mother

- c. Monthly Income of your family
- 10. Socio-economic background information (in-service teachers)
 - a) Monthly income of your family (Here family means husband, wife and children, Unmarried teachers should write their own income only)
 - b) If married, occupation and designation of your spouse -

Occupation

Designation

c) If married the educational qualification of your spouse:

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CENTRE OF ADVANCED STUDY IN EDUCATION FACULTY OF EDUCATION AND PSYCHOLOGY M.S. UNIVERSITY OF BARODA BARODA-390002

A FEW WORDS FOR THE TEACHERS

Teachers play, a vital role in the development and renewal of curriculum. Their knowledge. attitude perception of the subject are extremely important for this Development and renewal of curriculum environmental education cannot be an exception to the above Environmental education is gradually emerging and gaining ground in our educational system. It is yet to be established on a solid footing. You are already aware about environmental education. Through this questionnaire others that follow it, the investigator is trying to gather some additional information. These questionnaires do not, in any way, reflect your knowledge or capacity. These may be considered as valuable perceptions, attitudes, knowledge and form an empirical background suggestions that may curricular revision. So feel free and confident to respond. Your responses will be kept confidential and will be used for research purpose only.

II. QUESTIONNAIRE ON PERCEPTION REGARDING ENVIRONMENTAL EDUCATION

Direction:

There are two types of questions in this questionnaire. To answer some questions you are to select from among the alternatives, the one which you perceive as the best and encible the number denoting it. To answer other questions you have to fill-in the blanks. While responding to yes/no type questions, provide very briefly the reasons/justifications in support of your response.

- 1. Which of the following best describes the term 'environment'in the context of environmental education?
 - 1. Plant and animal kingdom, oceans, rivers, lakes, hills, forests, fields, atmosphere etc.
 - Society, its customs, rules, cultures, traditions, legal systems, governments etc.
 - 3. Industry, architecture, transport and communication systems, fine arts, scientific inventions, all occupations etc.
 - 4. All living and non-living things in the biosphere with interactions within and between themselves.
- 2. Environmental education means,
 - 1. education that uses environment as a resource for learning.
 - 2. education about the environment.
 - 3. education for improving the environment.
 - 4. all the above.
- The goals of environmental education should be -
 - 1. solution of environmental problems through awareness, concern and committed action.
 - 2. prevention of war particularly nuclear war for it would mean the end of the world.
 - 3. checking the growth of population and bringing it to zero level, for all problems emanate from population explosion.
- 4. Which of the following do you perceive as the best description of philosophy of environmental education?
 - 1. Mutual dependency between man and nature
 - 2. Subjugation of man by nature
 - 3. Mastery of man over nature

5.		ou think the world toda s grave environmental o	
6.	your prob	reference. Write the	nvironmental problems for name of the environmental to be most serious for the the space provided.
	i)	Deforestation	World
	ii)	Ecological Disruption	
	iii)	Loss of Wildlife	
	iv)	Population Explosion	India
	v)	Threat of Nuclear War	·
	vi)	Pollution	
	vii)	Resource Depletion	Orissa
	viii)	Energy Crisis	
	ix)	Land Use	
7.	educa		a course in environmental the solution/prevention of Yes/No
8.			is to be introduced in the level should it find place?
	1.	Elementary level	4. Teacher training level
	2.	Secondary level	5. All the above levels
	3.	College level	Any other combination (Please specify)
9.	What at		of environmental education school level?
	1.	A separate subject	
	2.	A methodological appr	each for all subjects
	3.	An interdisciplinary	subject.
	4.	An appendix to some s	ubject
	5.	Any other status (Ples	ase specify)

10.			do you perceive a ent in environmental			ising
		1.	Around certain cond	cepts,	laws, theories	
		2.	Around certain then	nes		
		3.	Around environmenta	al pro	blems	
		4.	Around activities			
		5.	Any other organisat	ion (Specify)	• • • •
11.	(a)	envii part:	ose it is decided conmental education icular subject, whi ides maximum scope?	wover ch of	into the contents	of a
		_	Language	-	Social Sciences	
			Mathematics		Games	
		-	Science		Creative Expressio	n
	(b)	,Doyo	ou think that such a	step		/No
12.		may senvin	below is a list serve as the basis fronmental education out, if any of table for secondar suggest any addit may be added to thi	or in at the y levional	structional materia secondary school l se concepts/themes el by encircling relevant concepts/	l for evel. are them.
		1.	Ecology	11.	Environmental ethi	c
		2. 3. 4. 5. 6. 7.	Biosphere Space-ship earth Population Pollution Recycling Erosion Technology	12. 13. 14. 15. 16. 17.	Natural resources Conservation Problem-solving me Decision making Energy Poverty Development	thod
]	9. LO.	Science Values	19. 20.	Economy Voluntary agencies	
					,	

Additional concepts/themes to be added

13. What do you think about the adequacy of environmental education material in the curriculum of secondary school and secondary teachers training programme?

(Put a tick mark.)

	Secondary School Level	Secondary Teachers Training Level
Sufficient	-	-
Not sufficient		
Non-existent	-	-

- 14. Environmental education at secondary school level should focus on the problems of -
 - 1. local environment
 - 2. state/regional environment
 - 3. national environment
 - 4. global environment
- 15. Has your teacher training preparation helped you to teach effectively environmental education ?

Yes/No/Partly

- 16. Do you need additional training in environmental education?

 Yes/No
- 17. Do you think, the teacher training courses need change to incorporate environmental education?

Yes/No

- 18. What are the sources of your environmental knowledge? You may encircle more than one of the following as appropriate.
 - Your School and College Education.
- 6. News paper
- Pre-service training
- 7. Journals & Magazines
- 3. In-service training
- 8. Participation in workshop.

4. Radio

9. Social contact

5. T.V.

- 10. Teaching experience
- 11. Any other (Please specify)

- 19. Environmental education involves undertaking field trips and working with community for solution of environmental problems. Does the existing secondary school schedule permit sufficient flexibility
 - a) to undertake field trips? Yes/No
 - b) to work with the community ? Yes/No
- 20. Should school schedule/routine be recast for the above purpose?

 Yes/No
- 21. What are the major constraints to environmental education? You may encircle more than one if appropriate.
 - 1. Teachers are not appropriately trained.
 - 2. There is too little/no public concern for environmental education.
 - 3. School schedule/routine is inflexible.
 - 4. Environmental education emphasises attitudes, values and beliefs whose changes are difficult to measure.
 - 5. Lack of adequate instructional material in school.
 - 6. Any other (Please specify).

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III. ENVIRONMENTAL KNOWLEDGE INVENTORY

PART-ONE

Direction:

In this part you will come across questions or incomplete statements. Each question/statment is followed by four alternatives numbered 1,2,3 and 4. Choose that alternative which best answers the question or completes the statement and encircle the number denoting the alternative. Plese do not leave any item unanswered.

- 1. Environmental problems of the world today, are due to -
 - 1. population explosion
 - 2. change in the life style and value system of people
 - 3. poverty and ignorance
 - 4. all the above factors
- 2. By mid July 1987 the world population crossed -
 - 1. 400 crore
- 3. 500 crore
- 2. 450 crore
- 4. 550 crore
- 3. Of all the diseases from which people in our country suffer, polluted water is responsible for approximately,
 - 1. 20 % of the cases
- 3. 60% of the cases
- 2. 40 % of the cases
- 4. 80% of the cases

4.	Once DDT is sprayed, its t	oxicity usually remains for -
	l. few weeks	3. many years
	2. about one year	4. ever
5.	The only national park in (Orissa is located at -
	1. Nandankanan	3. Chilika
	2. Kapilas	4. Similipal
6.	Which of the following does	s not cause water pollution ?
1	1. Industrial effluents	
	2. City/Town sewage	
	3. Fertiliser and pestic	ide run-offs from field
	4. Irrigation network	
7.	Destruction or depletion atmosphere results in incre	
	1. skin cancer cases	3. tuberculosis cases
	2. leprosy cases	4. heart diseases
8.	Which of the following judging the quality of wa point of view of pollution	ter in a pond/river, from the
	1. bacteria present	
	2. amount of dissolved o	xygen
	3. acidity/alkalinity (p	H value) of water
	4. amount of minerals pr	esent
9.	The best way to dispose of	'solid industrial waste'isby
	1. burning	3. using it as land fill
	2. burying inside the earth	•
		,

10.	The most likely future source of energy in the world will be -
	1. atomic 3. wind
	2. solar 4. tide
11.	The recent agitation against National Test Range for missile testing at Baliapal in Balasore, Orissa is against -
	1. improper use of agricultural land for defence purpose
	2. militarisation of a peaceful countryside
	3. central interference in state matters
	4. nuclear programme
12.	According to National Forest Policy, the percentage of forest cover out of the total land area should be -
	1. 22 2. 33 3. 44 4. 55
13.	The present higher level of air pollution in our country compared to that, at the time of independence is due to -
	1. increase in number of industries
	2. large scale deforestation
	 increased domestic consumption of coal and petroleum products
	4. all the above
14.	Decomposer organisms are very helpful to us because they help -
	1. to release basic elements locked up
	2. in photosynthesis
	3. to cleanse the air
	4. in bringing rain

- 15. Which of the following is a non-renewable resource -
 - 1. water

3. plants

2. minerals

- 4. animals
- 16. The population of Orissa is growing at a rate (as per 1981 census)
 - 1. more than the national average
 - 2. same as the national average
 - 3. less than the national average
 - 4. nearly equal to zero
- 17. If a lake records sudden growth of algae it indicates that -
 - the lake is likely to be uninhabitable for aquatic animals and plants.
 - 2. all the bateria in the lake will die soon.
 - all the fish in the lake are unfit for consumption.
 - 4. none of the above.
- 18. Thousands of people died in Bhopal in 1984 due to -
 - 1. drinking contaminated liquor
 - 2. flash flood

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- 3. flow of poisonous gas
- 4. devastating fire in industrial area
- 19. A substance is said to be biodegradable, if it can be broken down to its constituent elements by the action of -
 - 1. chemicals
- 3. bacteria

2. water

4. wind

20.		energy ne		ur cou	ntry 1	elating	to	oıl	i
	1.	wholly fr	om import	of	crude	oil			
	2.	wholly fr	om indege:	nous pr	oducti	on			
	3.	partly f productio	rom impor	t and	part	y from	ind	egeno	ou:
	4.	wholly by	converti	ng coal	into	petrol			
21.	appr	rding to "oximately red with fo	what perc						
	1.	5 2.	13	3. 1	7	4. 27			
22.	The	'Red Data I	Book! cont	ains a	list o	of -			
	1.	endangere	d plants a	and ani	mals				•
	2.	atomic po	wer statio	ons					
	3.	notorious	terrorist	ts					
	4.	poisonous	plants ar	nd anim	als				
23.	shor	process o t term a acteristics	and long	term	uses	, based	on	SC)il
	1.	land use		3.	land	reclaima	tion		
	2.	soil con	servation	4.	land	consolid	ation	ח	
24.	foll	per the popowing country in the	itries is	likle	y to	be mos	t po	pulo	
	1.	India	,	3.	U.S.A	•			
	2.	China		4.	U.S.S	.R.			

- 25. As a result of burning of fossil fuels, the amount of carbon dioxide in the atmosphere is -
 - 1. decreasing with possible serious effect on our environment
 - 2. decreasing but will not affect our environment
 - 3. increasing but will not affect our environment
 - 4. increasing with possible serious effect on our environment
- 26. Major threat to the preservation of the Tajmahal at present comes from -
 - 1. Mathura refinery
 - 2. sultry climate of Agra
 - 3. Agra's iron foundries and railway yard
 - 4. brick kiln work on banks of the Jamuna
- 27. The best method for pest control is done by -
 - 1. aerial spraying
 - 2. using chemical pesticides
 - 3. biological control using natural enemy of the pest
 - 4. integrated pest management technique
- 28. Oceans are a potential source, to supply minerals for future through -
 - 1. mining of metallic nadules from sea-bed
 - 2. extraction of mineral rich sea water
 - 3. salvaging ship-wreckages lying in sea-bottom
 - 4. extraction from the interior of submerged dead volcanoes
- 29. 'Green Belt' refers to -
 - 1. belt worn by army men for camouflage
 - 2. a strip of grass-land in a park
 - 3. tree cover around towns and cities to protect against pollution
 - 4. a strip of land along equator with heavy forest cover

- 30. Bhitarkanika wild-life sanctuary in Orissa is unique in our country for its possession of -
 - 1. white bear
- 3. white turtle
- 2. white crocodile
- 4. white tiger
- 31. Major obstacle to widespread use of solar energy at present is -
 - cost involved in tapping, storing and transmitting such energy
 - 2. public resistance to change to a new source
 - 3. lack of sunshine throughout the year
 - 4. solar energy is injurious to health
- 32. Large population growth in our country is mainly due. to -
 - 1. non-occurence of large famines after independence
 - 2.. phenomenal decrease in death rate due to improved medical care
 - 3. negligible migration to other countries
 - 4. total failure on family welfare front
- 33. To control population growth government have to -
 - 1. educate people
 - 2. reduce infant mortality rate
 - 3. provide social security
 - 4. do all the above
- 34. 'Smog' is a condition associated with -
 - 1. water pollution 3. noise pollution
 - 2. air pollution 4. pollution of soil

- 35. Which of the following environmental problem is not associated with nuclear power plants?
 - 1. Thermal pollution 3. Smoke pollution
 - 2. Radio-active pollution 4. Waste disposal
- 36. Soil nutrients can be preserved longer using the method of -
 - 1. monoculture 3. shifting cultivation
 - 2. crop rotation 4. intensive cultivation
- 37. Preservation of tropical rain forests are very important to us because -
 - 1. most of these forests are in India
 - 2. these forests contain about half of the world's total flora and fauna
 - 3. these forests are thickly populated by tribals
 - 4. men first originated in these forests
- 38. Salim Ali was famous for his contribution to -
 - 1. Yunani system of medicine 3. Islamic culture
 - 2. study of birds 4. national integration
- 39. With which of the following is Mr. Sunderlal Bahuguna connected?
 - 1. Indian dance and music
 - 2. Chipko Movement
 - 3. Apko Movement
 - 4. Treatment of drug-addicted youth

40.	Mina	nmata tragedy in Ja	pan occured due to consumption of
	1.	fish containing a	mercury
	2.	fish containing	arsenic
	3.	poisonous meat	
	4.	poisonous crab f	rom paddy fields
41.	Gree	enhouse effect tend	s to -
	1.	increase earth's	temperature
	2.	decrease earth's	temperature
	3.	keep the tempera	ture of the earth constant
	4.	have no effect or	n temperature of the earth
42.	radi	latest nuclear o-active material ared at -	power plant disaster spreading over a large part of the globe
`	1.	Chernobyl	3. Three Miles Island
	2.	Milan	4. Bhopal
43.	A p Gand	roject with high hamardan hills of	n potential for ecodisruption in western Orissa is -
	1.	NALCO	3. TELCO
	2.	BALCO	4. TISCO
44.	Whic exti	h of the follo nction of species	
	1.	Loss of habitat of	lue to deforestation
	2.	Pollution of term	citory
	3.	Hunting	
	4.	Change in climat:	ic conditions

45.	India	s population	at	the	end	of	this	century	is	likely
	to be	approximately	<i>-</i>							

- 1. 70 crores
- 3. 100 crores
- 2. 80 crores
- 4. 120 crores
- 46. India's first large scale attempt to cleanse its river pollution began with river -
 - 1. Narmada

3. Ganga

2. Yamuna

- 4. Brahmaputra
- 47. Silent Valley Project of Kerala was shelved as -
 - 1. it was not ecologically sound
 - 2. it would have caused heavy air pollution
 - 3. Kerala was a power surplus state
 - 4. it had low employment potential
- 48. 'Chipko Movement' is against -
 - 1. tree felling
 - 2. hydroelectric project
 - 3. tree planting
 - 4. creation of 'Chipko' land for tribals
- 49. Which of the following produces noise pollution of highest degree?
 - 1. Rail engine
 - 2. Jet-engine driven aeroplanes during take-off
 - 3. Loud speaker
 - 4. Village haat (weekly market)

- Which of the following is not an effect of population explosion?
 - 1. Increase in standard of living
 - 2. Environmental degradation
 - 3. Increase in unemployment
 - 4. Large scale urban migration
- 51. 'Green Cards' promising certain financial and reservation facilities given by government of Orissa is meant for -
 - 1. couples who have married intercaste
 - couples undergoing sterilisation with two or less living children
 - 3. couples who have a dowryless marriage
 - 4. couples who have no children
- 52. Which of the following is the least reliable contraceptive method?
 - 1. Birth control pills
 - 2. Intra-uterine devices (Copper 'T', loop etc.)
 - 3. Using sheath
 - 4. Rhythm method
- 53. As per law, abortions are legal under certain conditions if carried out at the latest within -
 - 1. 4 weeks

3. 20 weeks

2. 12 weeks

- 4. 24 weeks
- 54. The relationship between population and resources was first pointed by -
 - 1. Karl Mark
- 3. M.S.Swaminathan
- 2. Robert Malthus
- 4. V.P. Kurian

- 55. The symbol of "World Wide Fund for Nature' (WWF)(formerly World Wldlife Fund) is
 - 1. peacock

3. panda

2. tiger

4. lion

PART-TWO

Direction:

Each question in this part is a statement, followed by three numbers 1,2 and 3 on its right handside. Read each statement carefully and decide in each case whether it is true or false. If you decide the statement to be true, encircle 1. If you decide the statement to be false encircle 2. If you do not know about it, encircle 3. Do not skip over any item and answer all items.

•		True	False	Donot know
1.	Zero population growth occurs when death rate exceeds birth rate.	1	2	3
2.	Acid rain kills many forests and life in the lakes.	1	2	3
3.	Exposure to radio-active emission may cause genetic changes.	1	2	3
4.	Living things are interdep- endent on one another and their environment.	1	2	3

5	Indiscriminate use of pesticide to kill pests leads to resistance in pests.	1	2	3
6.	Natural resources of the world are equally distributed with respect to land area.	1	2	3
7.	Main purpose of social forestry is to provide timber.	1	2	3
8.	'Safe Number' refers to the minimum number of individuals in a species for it to survive.	1	2	3
9.	Wind is the only agent of 'soil erosion'.	1	2	3
10.	Many of the environmental problems are global in nature.	1	2	3
11.	Pollution results from affluence as well as poverty	1	2	3
12.	Any change in an ecosystem produces a chain reaction.	1	2	3
13.	Killing wild animals is necessary sometimes for their conservation.	1	2	3
14.	Man does not have the ability to manipulate and change environment.	1	2	3
15.	Alternative technologies can slow down resource depletion.	1	2	` 3
16.	Social behaviour of men can be affected by density of population.	1	2	3 .

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17.	Education and family size are unrelated.	1	2	3
18.	Stability of an ecosystem depends upon the diversity of life.	1	2	3
19.	Carrying capacity of an environment refers to maximum population that can inhabit it under given conditions	1	2	3
20.	Pollution caused by men may bring about irreversible changes in the environment.	1	2	3
21.	Greenhouse effect may drown cities in low lying land areas.	1	`2	3
22.	All food preservatives and additives are harmless.	1	2	3
`23.	Supersonic jet airliners destroy ozone layer.	1	2	3
24.	Nuclear wars may cause nuclear winter.	1	2	3
25.	The main function of wild-life sanctuaries is recreational.	1	2	3
26.	Organisms adapt at the same pace at which environment changes.	1	2	3
27.	Earth is like a space-ship with respect to resources.	1	2	` 3
28.	Large dams and reservoirs change the ecological relationship of their locality.	1	2	. 3

29.	Pesticides get diluted as they pass through food chains.	1	2	3
30.	Consumption of natural resources is a function of development.	1	2	3
31.	Deforestation may lead to climatic changes.	1	2	3 -
.32.	Overgrazing decreases chances of desertification.	1	2	3
33.	Nature has its own scavengers to dispose of waste.	1	2	3
34.	Captive breeding may help in preventing extinction of species.	1.	2	3
35.	Animals can tolerate any level of pollution of their habitat.	1	2	3
36.	Gene erosion like soil erosion is not visible.	1	2	3
37.	Sun is the ultimate source of all energy.	1	2	3
38.	Biogas plants cause air pollution.	1	2	3
39.	Land use patterns remain unaltered in spite of development.	1	2	3
40.	Non-renewable resources are unlimited.	1 .	2	. 3

IV. ENVIRONMENTAL ATTITUDE SCALE:

Direction: This is not a test

Given below are number of statements about environment and its associated problems. To the right hand side of each statement are written numbers 1,2,3,4 and 5. Express your free and frank opinion on each item by encircling,

- 1 if you strongly agree with the statement,
- 2. if you are agree with the statement,
- 3 if you are undecided about the statement,
- 4 if you disagree with the statement,
- if you strongly disagree with the statement.

It may be noted that there are no wrong or right answer to any item. Please make sure that you answer all items.

		SA	Α	Π,	D	SD
1.	Limiting family size is essential to avoid over-population.	1	2	3	4	5
2	Abortion irrespective of when carried out is a sin.	1	2	3	4	5
3.	People wishing to have more than two children should adopt a third child.	1	2	3	4	5
4.	Enforcing a one child family norm would only encourage female infanticide.	1	2	3	4	5

5.	Compulsory sterilisation is the only solution for India's population problem.	1	2	3	4	5	
6.	Sex of a child should make no difference to the parents.	1	2	3	4	5	
7.	Urban slum problem can be solve by deporting slum dwellers to rural areas.	ed 1_	2	3	4	5	
8.	People opting for large families should be given government subsidy for maintenance.	1	2.	3	4	5	
9.	Industries should be asked to bear the cost of pollution that they make.	1	2	3	4	5	
10.	Unchecked growth of industry is desirable to raise India's GNP.	1	2	3	4	5	
11.	India's pollution problem should not cause any alarm.	1	2	3	. 4	5	
12.	Economic gain should be the only consideration in opening a new industry.	1	2	3	4	5	
13.	Strong enforcement of laws are most effective ways to reduce pollution.	1	2	3	4	,5 `	
14.	Pesticides remaining toxic for longer periods should be banned.	1	2	3	4	5 ,	
15.	Man is morally responsible to protect his natural environment.	1	2	3	4	5	

16.	Mine contractors should not be allowed to leave mines in any way they like once they have extracted all minerals.	1	2	3	4	· 5
17.	People should use recycled material even if it costs a little more.	1	2	3	4	5
18.	Oil and minerals should immediately be extracted from Antarctica without bothering for its environmental impact.	1	2	3	4	5
19.	Man should change his life style to conserve natural resources.	1	2	3	4	5
20.	All saw mills should be nationalised to check illegal trade in timber.	1	2	3	4	5
21.	It is not the responsiblity of government to rehabi- litate people displaced by dam projects.	1	2	3	4	5
22.	Plants and animals exist mainly for man's enjoyment.	1	Ż	3	4	5
23.	People using furcoats should face social boycott.	1	2	3	4	5
24.	Admission of people to national parks should not be restricted.	1	2	· 3	4	、 . 5
25.	Government should patronise vehicles consuming less fuel.	1	2	3	4	5

26.	To conserve fuel, restrictions should be placed on driving for pleasure.	1	2	3	4	5
27.	Government should put a blanket ban for use of forest land for agriculture.	1	2	3	4	5
28.	Most of the concerns for environmental problems have been exaggerated.	1	2	3	4	5
29.	Science and technology can solve all environmental problems.	1	2	3	4	5
30.	Todays intense interest in environmental crisis is just another passing fad.	1	2	3	4 `	5