PRACTICAL EXERCISE 15

Read the following passage and answer the question that follows it.

Does a child who performs well in class belong to parents who were highly educated or parents who were school dropouts? A study by the Uganda National Examination Board on the progress of education revealed that children, whose parents were highly educated were performing well at school.

Is it true? Mr. Patrick Mwasa, a counseling psychologist at Makerere University says definitely a parent's academic level determines a child's performance at school. He says an educated parent will have value for education and will want the child to follow in his footsteps. Mrs. Gladys Wambuzi, a long serving teacher and the headmistress of Greenhill Academy in Kampala, says parent's value for education is valued is capable of doing school work in time, respecting him/herself and his teachers which lead to excellence.

A parent who has a value for education will be in constant touch with his child's teachers so as to monitor his performance and this will check the child's excellence in class," she says. She says an educated parent pays fees on time and the child settles at school to concentrate.

Wambuzi, however, says some rich parents do not know the value of education and tend to mislead their children by providing them with unnecessary things like excess money, which ends up making the child see no need to work hard.

"This also leads to disobedience at school because the child thinks that he expelled from a school his parent is capable of getting him another one and that if the performance is poor at primary, his parents can bribe to get a good secondary school," Wambuzi said.

According to Mr. Mwase, children form poor homes perform better in most cases due to self-motivation. He attributes such a child's excellence to significant people in society he or she lives in that may inspire him or her. He says that children from rich families tend to relax at school by making friends of their status with whom interaction focuses on social issues and not academics- they get messed up.

Mwase adds that rich and famous parents have influence and this is good for their children's academics performance. He says some children from rich families tend to use their parents' status as a license to misbehave and be undisciplined thinking that their success in the end.

Mwase says much as parents of a child would influence his performance, it should go hand in hand with authority. He says children of authoritative parents tend to work hard so as not to let their parents down.

They always have that urge to please. On average he says, rich and highly educated parents are likely to have better performing children.

Children from affluent families tend to perform excellently because they are exposed to learning materials ranging from computers, textbooks, audio video and others.

Rich parents pay school fees in time. At school, children are provided with the necessary requirements like pocket money and this reduces academic stress and keeps them focused.

From: *The Daily Monitor, Monday August 2, 2004*

Question:

In about 100 words summarise the reasons that make children perform well at schools.

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PRACTICAL EXERCISE 20

Read the passage and answer the question that follows it.

In 1970, Thor Heyerdahl crossed the Atlantic on a balsa raft, re-enacting the journeys of earlier centuries. Sitting on the raft just above the surface of the water, he was surprised and distressed to find that he was rarely out of sight of man-made garbage. A major component of this was lumps of oil tar, about 6cm in diameter.

These lumps of oil tar were the residues from numerous oil spills, blowouts, and leaking wells, washing of ship tanks and other spills both large and small. It is estimated that the loss of oil into the seas is 0.1% of the total shipped each year. However, this seemingly small percentage is a total of *ten million tones.* What effect is this influx having on the ocean? The immediate effects are known. Birds which have their feathers coated in oil are prevented from flying, and when they preen their feathers to remove the oil, are poisoned by ingesting it. Fish and shellfish are affected because their food and surrounding become coated with oil.

The long-term effects are less well known. What is known is that hydro-carbons (the building blocks of oil) can pass through many stages of food chain without breaking down. This means that small marine animals, which in turn are eaten by larger animals, can eat hydrocarbons, which coat plants in the sea. Eventually humans eating fish from the sea may ingest them. The hydrocarbons are passed all the way along. People may notice an unpleasant taste in the fish they eat. This comes from certain oil substances in the fish's system. Another more serious consequence is the possibility of people eating substances in their food, which may cause cancer, or may poison the body in other ways.

Scientists know of another long-term effect on marine life but it is not fully understood. It was discovered that fish find their food and mates and escape from predators by releasing low concentrations of certain chemicals. This works for the fish the way a sense of smell works for land animals. When oil is spilt into the sea the hydrocarbons interfere with this natural process. This may ultimately have the effect of wiping out some species of fish.

The oceans are a great food source for mankind. With increasing pressure on the land, the sea will become an even more important source of food. Before it is too late, we must influence governments to take significant action to preserve the seas as a major resource for us all.

From: *Man – made Disasters* by John E. Butler

Question:

In 120 words explain the effects of oil pollution of the sea.

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PRACTICAL EXERCISE 22

Read the following passage and answer the question that follows it.

Absent fathers are defined as those who do not interact with their children on a regular basis and consequently do not play a significant role in their development. Divorce, death and abandonment are all forms of absence but nevertheless affect female development differently. The age at which a daughter loses her father is meaningful since it influences her perception of males, the world as well as her academic advancement. Fathers play a significant role in female achievement in mathematics (Adams, Milner and Schrepf 1984, p. 128). Mathematics is typically associated with masculinity therefore females without father figures may have less interest in this subject matter. Female high school seniors were more likely than their male peers to say they did not take mathematics and science courses because they disliked the subject matter (35% and 22%) and had been advised against taking these courses (32% and 26% respectively) (Bae, 1997). Essentially females are discouraged from pursuing a career in mathematics and father absence contributes to this phenomenon by not providing them with a male role model to stimulate their interest in this area.

Security regarding females and their fathers is a key element since it greatly shapes their development (Griffin, 1998). Women without father figures lack a sense of protection and as a result may become discouraged. Examples of this phenomenon are teenage pregnancy, dropping out of college, never attempting college and low self-esteem (Griffin, 1998, p. 21). Although fatherless females may encounter limitations as a result of their missing fathers, it is not impossible for them to succeed.

Stability is another important aspect affecting the lives of females, which inevitably shape their college careers. Fathers' absence not only hinders their ability to make sound decisions, it also triggers negative reactions as opposed to positive ones (Griffin, 1998, p.26). Daughters obtain secure foundations knowing what their fathers believe in and stand for (Griffin, 1998, p. 27). A confident base enables females to be successful in their endeavors and accomplish what they attempt.

The purpose of this paper is to examine the behaviors and decisions made by females without father figures, while focusing on their college attendance. This study also displays the categories in which most fatherless daughters are placed in terms of success.

Female observation and perception is dependent upon whether they lost their father to divorce, abandonment or death, and at what age. How and why a father is absent will have an impact on the emotional and material outcome for the child (Grimm-Wassil, 1994, p. 5). The different answers help explain why some females have abandonment issues, depict men a certain way, have difficulties determining their self- worth or consequently become sexually promiscuous.

Girls who have little contact with their fathers, especially during adolescence had great difficulties forming lasting relationships with men. Sadly these females either shy away from males altogether or become sexually aggressive. Girls with involved fathers learn how to interact with males by using the father-daughter relationship as a model. They not only have a concerned male to converse with but also a feeling of acceptance, knowing they are loved by at least one male.

Females deprived of a father as a result of death tend to have the most positive concept of their father while feeling the saddest about his disappearance. Girls whose fathers died before the age of five are extremely reticent around male adults, shy away from physical contact with them and rarely smile (Grimm-Wassil, 1994, p. 149). In terms of sexuality daughters of widows are likely to be scared of men while daughters of divorce tend to be "clumsily erotic" (Adams, Milner and Schrept, 1984, p. 171).

Girls with absent fathers grow up without the day-by-day experience of attentive, caring and loving interaction with a man. Without this continuous sense of being valued and loved, a young girl does not thrive, but rather is stunted in her emotional development

The negative effects later in life have been well documented, with numerous studies indicating that girls from fatherless families develop more promiscuous attitudes and experience difficulty in forming or maintaining romantic relations later in their development (Lohr, Legg, Mendell and Reimer, 1989, p. 354). These behavioral patterns are carried with them into womanhood and may be the cause of their unfulfilling relationships with men.

From:*College Student Journal, Dec, 2001* by Franklin B. Krohn, Zoe Bogan

Question.

In about 120 words explain the effects of absent fathers on females.

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PRACTICAL EXERCISE 26

Read the following passage and answer the questions that follow it.

T.V. Interviewer: Welcome to our programme. The topic this evening is football and some of the problems that have arisen in the game in the last few years. On the panel we have the manager of a Football club, and a journalist. Let me start by asking our manager to comment on the behavior of the fans not only during the matches but also afterwards, especially if their team has lost.

Manager: It is very difficult to see how a football club can be held responsible for the behaviour of its supporters once they leave the ground. During a match we do all we can to ensure that they behave responsibly.

Journalist: But do you? How many games are abandoned because players refuse to accept the decision of the referee? How can you expect supporters to behave when the players foul each other quite deliberately and viciously and often quite openly fight each other in the middle of the field?

Manager: Look, football is a professional sport. I am paid to coach the team to win. The players are paid to win. They receive bonuses for scoring goals and larger bonuses for winning leagues and cups. To pay all this money we need to attract the fans and the fans won't come to support a losing team.

Journalist: Exactly! Everything you have said proves the point I am trying to make. All this money encourages a win-at-all-costs attitude. It's not a sport anymore, it's business. You don't really care how the fans behave as long as they spend their money.

Manager: Well, we certainly don't get much help from you newspaper reporters. You seem to enjoy telling the public about the bad side of the game. Why don't you concentrate more on the football that is being played.

Journalist: Now you sound like some of these politicians who believe everything they do is right and can't bear to be criticized, even constructively. If the game we're reporting ends in riot, or the players walk off because the referee gives a penalty, what do you want us to do? Pretend it didn't happen? Make up a match, which ends happily?

Interviewer: Well I think that it is perfectly obvious now that a problem does exist. Perhaps it would be more beneficial if we tried to decide how the problem could be solved.

Journalist: Basically the answer lies with the clubs. The players and the managers as well, simply have to learn how to behave. If they keep calm and accept the decisions of the referees, the fans will soon behave themselves. Also if they are given the right encouragement the fans will take care of the troublemakers in their own ranks themselves. Whether it's a sport or big business it has to be run in a sensible manner.

Manager: It's all very well talking about accepting referees' decision. Some of our referees don't appear to know the rules. In the excitement of the moment it is very difficult for a player to keep his temper when he knows the referee has blown him up wrongly. The second thing is that if you journalists would stop making big headlines out of the unfortunate events, which sometimes occur — these a minority anyway— and help to educate the public to appreciate soccer, you would be doing the game a service. In any case no matter what we do there will always be a lunatic few who are dissatisfied no matter how good the game is. They are the ones we have to get rid of.

Journalist: It seems to me that if the football administration dealt more firmly with the clubs, for example, by fining the clubs if the fans misbehave, or closing the closing the grounds so that offending teams are forced to play away, then the clubs themselves would be bound to take more positive steps to deal with the matter.

Interviewer: Do you think the football administration .....

Questions ;

(a) In more than 60 words, summarize the problems facing football as a journalist sees them.

(b) In less than 80 words, summarize the various solutions proposed by the manager and journalist.

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PRACTICAL EXERCISE 27

Read the following passage and answer the question that follows it.

America's No. 1 source of lead exposure in children is deteriorating lead paint in older housing. Because young children frequently put their thumbs and fingers and objects they handle in their mouths, they are easily poisoned from chronic ingestion of lead paint chips and house dust or soil that may have lead particles in it. The Consumer Product Safety Commission (CPSC) should ban house-paint having more than 0.06 percent lead. But housing built before then, particularly before 1950, may contain lead paint. The Environmental Protection Agency and Department of Housing and Urban Development require owners of pre-1978 housing to give prospective buyers or renters federally approved information on the risk. Buyers must have 10 days to inspect for lead-based paint before being obligated by a contract.

Improper housing renovation increases exposure. The riskiest practices are sanding, scraping or removing lead paint with a heat gun, which taint the air with lead paint dust. CPSC warns: There is no completely safe method for do-it-yourself removal of lead paint. Only experts should remove lead paint.

Clark Carrington, Ph.D., of FDA's dairy foods and beverages contaminants branch, names workplace exposure as the next major potential source of lead. Besides their own exposures, workers may bring lead dust home on clothes, hands or hair, exposing children in the household.

Occupations that may expose workers to lead include painting, smelters, firearms instruction, automotive repair, brass or copper foundries, and bridge, tunnel and elevated highway construction.
To help protect workers from such exposure, the Occupational Safety and Health Administration calls for removal of workers from the workplace if their blood lead levels reach 50 mcg/dL. EPA limits lead emissions from certain industries.

Certain drinking water systems can also pose a lead risk. Under EPA rules, if lead exceeds 15 parts per billion (ppb) in more than 10 percent of public water taps sampled, the system must undergo a series of corrosion control treatments. The main culprits are corroded lead plumbing, lead solder on copper plumbing, and brass faucets. Lead is highest in water left in pipes for a long time—for example, when the faucet isn't used overnight.

FDA's quality standard for bottled water requires that lead not be present at 5 ppb, the lowest concentration that generally available methods for water analysis can reliably measure. If bottled water contains lead above this level, it is subject to regulatory action, including removal from the marketplace. Some ceramic ware has lead in the glaze and may introduce small amounts of lead in the diet, which the body can tolerate, says Carrington. "The major problem with ceramic ware is the rare poorly made piece with very high levels of leaching lead." Bolger adds that even with these pieces, risk varies. "A plate coming in brief contact with food is not an issue," he says, "but storage of food in such a bowl or pitcher is a risk." It's especially wise to avoid storing acidic foods like juice and vinegar in ceramic ware, as acids promote lead leaching.

Antique ceramic ware may leach high levels of lead. Consumers can use a lead test kit from a hardware store on such pieces and on other hand-painted ceramic ware they may already own. Avoid using such items—particularly cups, mugs or pitchers—if the glaze develops a chalky gray residue after washing.

"And you want to make sure," says Rosenthal, "that you know whether an item is for food use, or if it's for decorative use only." FDA requires high-lead-leaching decorative ceramic ware to be permanently labeled that it's not for food use and may poison food. Such items bought outside the United States may not be so labeled, potentially posing serious risk if used for food.

From: *http://www.parentingweekly.com/parenting_information/dangers_of_lead.htm*

Question:

In about 130 words explain the measures that should be taken to minimise lead absorption into the human body.

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PRACTICAL EXERCISE 33

Read the following passage and answer the question that follows it.

Mountain Elgon in Mbale continues to experience soil erosion. The State of Environmental Report (SER) 2002 confirmed the 1991 district estimate that soil erosion was responsible for 80% of the land degradation. The most affected areas include the steep slopes of Mt. Elgon that experience mass wasting.

Mary Wamimbi, Mbale district environmental officer, says landslides have been a problem for long. The heavy El Nino rains of 1997 and 1999 left 48 people dead and 10,000 displaced.

Landslides are down ward movement of rock material and soils by gravity. They are common in Bushiyi, Ulukusi, Budwale and Manjiya. Rainfall, steep, loose soils and lack of vegetation cover contribute to landslide. Heavy erosion is evident in landslide – prone areas.

Rivers originating from the mountaintop carry high sediment loads, especially during rainy season and have been polluted to brown color.

According to Mbale district SER of 1998 – 99, soil erosion was 58%, deforestation 55%, loss of soil fertility 47%, pollution 37% over grazing 7% river banks degradation 5%, and wetlands degradation 3%. Deforestation on the mountain has left a land open to erosion as more areas are being converted to agriculture. The water erodes the exposed soils on the steep slopes.

Mt. Elgon National Park occupies 21% of the district area (52, 416 hectares) of gazeted forests and mountain Elgon forest occupies 50951 hectares. The forest outside the park comprises 0.6% of the district area. The wetland comprises 14.4% according to the forest department, Biomass survey of 1997.

The population secretariat, Minister of planning and economic development said, it was projected that the district will have 905.100 people by mid- 1998. It is one of the districts of highest fertility rate of 7.0 children to every female. Population density varies from a low of 20 people per square kilometer in insecure areas in the north of the district to over 450 people per square kilometer in the farm lands around Mbale town. Currently, the Mbale rural area has a population growth of 1.9% and urbanization is growing at 9.8% per annum. This is causing a strain on the district's natural resource base.

Population explosion has led to scarcity of land. Farmers are forced to occupy fragmented pieces of land leading to soil degradation. Soil minerals have been depleted due to intensive farming in the mountain slopes, along Manafa riverbanks, over – cultivation, burning of mulching residue, vehicles trampling and over grazing road results.

Farmers grow crops for home consumption. The harvest however cannot sustain the family throughout the year. The district is endowed with rich volcanic soils.

Wamimbi says industries and institutions using wood products have contributed to deforestation. The energy consumption in the district for fire wood is 89%, charcoal 10.3% and gas/electricity 0.7%.

Mining is another cause of environmental degradation. "This includes sand and minerals from the pits which are not failed afterwards. Those pits have become breeding sites for mosquitoes".

Wamimbi also says that some farmers start drinking early and waste a lot of productive time. "This has stimulated the Enguli distillers polluting rivers affecting the aquatic life."

Tree species like Albizia, Mangos, Mvule and Mutuba are under threat of extinction as people cut them for charcoal and making herbs. The use of the leguminous crop residues reduces crop yields. Colobus monkeys whose skin is used for circumcision ceremonies are also threatened.

The effects of soil erosion are themselves causes of further degradation. There are always strong links between measures for soil and water conservation to break the cycle; one has to attack the causes of soil erosion. The management of soil involves different approaches. Reductions of surface run – off by physical structures or changes in land management can reduce erosion.

National environment Management Authority (NEMA) spokesperson, Winfred Bbanabakintu, says they have intervened by carrying out tree planting on the slopes and the riverbanks. "Restoration of affected areas has been done and farmers cautioned against tilling on slopes during rainy season."

NEMA also provides the district with funds to facilitate environmental activities in the district. Eight plant nursery beds have been established and over 10,000 seedlings distributed in addition to supporting five environmental micro projects.

To ensure a firm success of sustainable agriculture and meetings scarcity of wood fuel, Integrated Rural Development Initiative (IRDI) has carried out a number of technical trainings and facilities of farmers. Seeds, potting polythene materials, watering cans, wheelbarrows and fencing materials have been given to farmers to manage their nurseries.

Soil and water conservation, crop husbandry, improved banana, fruits and vegetable growing. Agro – forestry, pests and diseases control have been addressed.

"There has been an increase in the demand for Agro-forestry trees" says Andrew Yiga, Mbale IRDI project officer we support the tree demonstration community sub county plant nurseries. Sunya Yetana group is attached to Bushika, while kaato is attached to Buwanyani farmers association and Bunamulunyi community farmers association is attached to Buwawala. Over 50 farmers have established nurseries and wood lots in their homes.

Cosmos Wamono, a farmer from Kaato has raised over 500 Calliandra and 5,000 eucalptus seedlings. Samson Mugumba of Buwabuwala has also syprus, grevillia, Molinga and eucalyptus and Ovacado seedlings.

Moringa and Eucalptus species are on high demand. GrevilliaRobstar and Agro –forestry tree and Eucalptus grow in 5 – 7 years.

Other Agro – forestry tree species growing faster and adopted are: sesbania, calliandra, and leuceana, lucocephela. They provide firewood, fodder for animals, soil fertility and conservation. Fruits like paw paws and passion fruits have been protected. Passion fruits fetch a good income with one major harvest between September and December.

From:*The New Vision, September 19 2005*

Question :

(a) In less than 100 words summarize the ways in which the environment has been degraded.

(b) In not than 40 words, summarize the measures used to curb environmental degradation.

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Perhaps the most frequently quoted example of soil erosion is that of the American Dust Bowl. Its natural equilibrium was upset by over-cultivation and the land was reduced to near desert conditions. Wind erosion accelerated the process assisted by a succession of dry years. There are many areas of the U.S.A., which have felt the impact of wind erosion. Others have been subject to water erosion on land, which, through misuse has lost its fertility.

A number of measures, which help to conserve soil, have been in use for centuries in many parts of the world. Their primary aim is to make the best use of rain. They include terracing, contour farming and strip ploughing, which control the quantity and pace of water run-off. Over the years, many of the best soils have been developed under grass. The soil itself must have good biological content of minute organisms to circulate the nutrients and maintain a healthy structure. With some crops soil conservation is facilitated by allowing weeds to grow or by cultivating leguminous crops. These help protect the soil from wind and water erosion and can be ploughed back as manure.

To restore vegetation cover to barren lands is a slow process. But the scientific and technical problems are far outweighed by those arising from man's use of domestic animals notably goats and sheep. These animals have caused soil erosion in many areas and it is urgently necessary to have more control over them. Goats and sheep have grazed large areas of Mediterranean countries into subsistence farming or deserts; they prevent tree growth and have reduced the average tree line by 1000feet in four centuries. Unfortunately they and cattle are still being introduced into areas being cleared off forest in Africa. For example the cattle of the Masai in Tanzania give rise to much erosion in their now restricted territories. In many instances, a far greater yield of protein could be obtained by farming, the wild animals in these territories. These animals and plants on which their life is based have achieved a harmony or balance in their relationship which history shows is rarely achived between the goats as farmed by humans and its terrain.

Adapted from: *Man and Environment* by Robert Arvill.

Questions:

(a) In not more than 70 words, explain how man's use of the soil and his animals has led to the devastation of large areas of land.

(b) In not more than 50 words, explain how soil can be conserved.

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But even if we simply proceed with the banning of a whole range of existing persistent pesticides, the problem is not necessarily solved. There are pests. They do eat crops. In parts of Asia, up to a quarter of the harvest may go to feed not humans but predators. Corn output may increase by 60 percent, potatoes by 70 percent if their resident pests are eliminated.

There are some alternatives. Productivity began to spring up in the U.S.A. in the 1930s when some short-lived and naturally produced insecticides, such as pyrethrum, were brought into use. But they have an effective life of only a few hours and require repeated spraying.

There are alternatives to chemicals in the shape of biological forms of control. True, they have to be used with even more care than the chemicals. A mutant strain of predator or virus, getting out of control, could be a more formidable danger than the chemical elimination of a single species. In other words, they may turn out to be much more effective than synthetic pesticides. Sterilizing the male flies has for instance, controlled the screwworm fly, which infects cattle.

Another possibility is the introduction of a specific predator to attack a particular plant or animal pest. The Australians brought a spreading ruin of cactus under control by introducing cactolastus, a South American moth whose larvae killed off the cactus. There is risk in this, of course. A predator or virus brought in to cure one evil may set off a dozen others. The more precise the relationship between predator and prey, the safer the experiment.

Another approach lies in carefully learning the growing and maturing patterns of both plants and insects. Then crops can be chosen and planted in such a way that they can be harvested before the expected attack from local insects or microbes.

So far, the most effective form of biological control, based upon a close and understanding co-operative with nature's own forces, has been the development of strains of crops resistant to local pests and diseases. In this type of research the winds, the cycles of vegetation, the rainfall, the soil types, the natural predators and their place in the local food chain—all have to be fully understood. Techniques of pest control, aerial spraying over vast acreages with lasting lethal poisons lies at exactly the opposite extreme from this.

Adapted from: Only One Earth: the care and Maintenance of a Small Planet by *Barbara Ward* and *Rene Dubos*.

Questions :

(a) In not more than 60 words, write a summary of the possible dangers in the use of chemical pesticides.

(b) In less 90 words, summarize the various forms of biological pest control.

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PRACTICAL EXERCISE 49

Read the following passage and answer the questions that follow it.

It is clear that the economically developed countries have low fertility rates and low rates of populatio growth and that the less-developed countries of the world have high fertility rates and high population growt rates. It also appears obvious that reducing fertility rates would be to everyone's advantage; however, severa factors influence a person's desired family size. Some are religious, some are traditional, some are social, and some are economic.

The major social factors that determine family size are the role and desires of women in the culture. In many male-dominated cultures, the traditional role of women is to marry and raise children. Often this role is coupled with strong religious input as well. Typically, little value is placed on the education of women and early marriage is encouraged, Thus, in these cultures, women are totally dependent on their husbands and children in old age. Because early marriage is encouraged, fertility rates are high, since women are exposed to the probability of pregnancy for more of their fertile years. Lack of education reduces the options for women in these cultures. They do not have the option to not marry or to delay marriage and thus reduce the number of children they will bear. By contrast in much of developed world women are educated, delay marriage, and have fewer children. It has been said that the most important single activity needed to reduce the population growth rate would be the education of women. Whenever women receive education, fertility rates fall.

Data from the United Nations indicates that almost 50 percent of sub-Saharan African women, 40 percent of Asian women, and 30 percent of Latin American women are married by age 18. Their total fertility

rates are 6.5, 3.2, and 3.2 children per woman per lifetime, respectively. In the developed world, the average age of first marriage is 23, early marriages are rare, and the total fertility rate is about 1.8 children per woman per lifetime.

As women become better educated and obtain higher-paying jobs, they become financially independent and can afford to marry later and consequently have fewer children. Better-educated women are also more likely to have access to and use birth control. In economically advanced countries, 70 to 80 percent of women typically use contraception. In the less-developed countries contraceptive use is much lower less than 20 percent in Africa and less than 50 percent in Latin America and most of Asia (except China). Changing attitudes towards divorce may also be tied to reduce fertility.

It is important to recognize that access to birth control will not solve the population problem. What is most important is the desire of women to limit the size of their families. In developed countries, use of birth control is extremely important in regulating birthrate. This is true regardless of religion and previous historical birthrates. Italy and France, both traditionally Catholic countries, have birthrates of 10/1,000 and 13/1,000, respectively. The average for the developed countries of the world is 14/1,000. Obviously, women in these countries make use of birth control to help them regulate the size of their families. By contrast, Mexico, which is also a traditionally Catholic country, has a birthrate of 29/1,000, which is typical of birthrates in the less-developed world regardless of religious tradition.

When women in the less-developed world are asked about desired family size, they typically suggest four or more children as being the desired number, but the desired number is usually fewer than the number they actually have and both are much higher than the replacement fertility rate of 2.1 children. Access to birth control will allow them to limit the number of children to their desired number and will allow them to space their children at more convenient intervals, but they still desire more children than the 2.1 needed for replacement. Why do they desire large families? There are several reasons. In areas where infant mortality is high, it is traditional to have large families with the recognition that several of a woman's children may die before they reach adulthood. This is particularly important in the less developed world where there is no government program of social security. Security in old age is more assured if parents have several children to contribute to their needs when they can no longer work.

Furthermore, the economic benefits of children are extremely important. Even young children can be given jobs that contribute to the family economy. They can protect chickens and other livestock from predators, gather fire wood, cook, or carry water. By contrast, in the developed world, large numbers of children are an economic drain.

From: *Environmental Science,* by Eldin D. and Smith

Questions :

(a) In about 70 words explain the reasons for the prevalence of high population growth.

(b) In about 50 words summarise ways of curbing population increase.

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PRACTICAL EXERCISE 51

Read the following passage and answer the question that follows it.

On a world scale, some collectors are a major threat to certain groups of plants such as tropical orchids and succulents, which are keenly grown by many amateurs. In Mexico commercial raiders have brought some cacti to the verge of extinction. The export of orchids from South, East Asia is also believed to be considerable. When such a plant becomes rare by natural causes or by habitat destruction, the threat from collectors intensifies since rare plants are considered particularly desirable and fetch high prices. The result is vicious circle, which results in extinction.

A number of countries have strong laws protecting their flora but enforcement is difficult, especially in the tropical countries with such rich and varied floras. Fortunately international action is being taken which may ease the situation. In 1973, 57 nations signed the Washington convention on international trade in Endangered species of Wild Fauna and Flora. By a licensing scheme, this aims to monitor and in some cases control the international trade in a given list of plants between scientific institutions and to encourage cultivation in large numbers by nurserymen so that the pressure can be taken off wild populations. This is a great step forward.

What can be done about the great majority of threatened plants, those threatened by grazing, forest destruction or similar causes? The best solution is to protect the habitat and so conserve the plants and animals it contains. Cultivation in botanic gardens is a valuable 'long-stop' against final extinction but is no long-term solution. The formation of National Parks and Nature Reserves to cover large samples of all types of vegetation and to include as many threatened species as possible is an urgent task. The resulting profits from tourism can be considerable, although of course it is very difficult to maintain large wilderness areas intact and free from human settlement, especially where poverty is involved; management must always be

related to the needs of the fragments of unique vegetations remain, absolute protection is essential, although it is uncertain how far islands of vegetation in a sea of disturbed land can maintain themselves in the long-term.

In recent years the importance of reconciling conservation with development has received great interest. In Britain this has involved, for example, re-creating habitats for wildlife on small patches of wasteland, leaving aside small areas of trees from the plough, allowing undergrowth to develop in commercial forests. Above all it implies an awareness of the wildlife around us and an understanding of their needs. But it is in the less developed tropical countries where it is so important to bring conservation and development nearer together.

From: *The Illustrated Encyclopedia of the plant kingdom* by Anthony Huxley

Question:

In less than 90 words explain the ways of protecting threatened species.

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PRACTICAL EXERCISE 56

Read the following passage and answer the questions that follow.

As the number of large-scale oil spills from tankers has increased over the last fifteen years, the techniques for cleaning up have improved. A major problem is that tankers carry a great variety of oils. Even the basic crude oil carried varies from one source to another. Therefore chemicals, or other techniques that work with one form of oil, may not be suitable for others.

An additional problem is the sea conditions around the spillage. They may be rough or calm, warm or cold, salty or nearly fresh, shallow or deep. Therefore the techniques used will have different effects in each case.

The earliest methods were to use straw to soak up oil, and detergents to disperse it at sea. The detergents caused all kinds of problems for marine life, and in some cases did as much damage as the oil. Later, booms were used to contain oil spills in calm waters. A string of floating booms can be placed around oil spills, or ships leaking oil, but if the water is not calm then the boom is not likely to be effective. Sometimes chemicals are used in a similar way to contain the oil in one place. Pumps are then used to remove the mass of oil to a tank.

There are mechanical devices called *skimmers*, which pick up oil from the top of the sea, but again they are useless in rough water. Some skimmers use blocks of absorbent material, which can pick up oil and then separate it from seawater.

The method, which was at first thought to be the best, was the use of chemicals. These break up the oil spills into small particles by lowering the surface tension of the oil. The oil spills are dispersed throughout the sea. However, the chemicals used have often been toxic and have killed fish, birds and plants in the sea. Concentrated in a small area, the combined effects of oil and the toxic chemicals can be disastrous.

Another recent method developed is the use of micro-organisms, such as those, which eat oil in the normal marine environment. They have been used in large quanties to get rid of oil spills. However, although they cause no dangers themselves, there are limits to the quantity and types of oil they can destroy.

During the Torrey canyon panic, attempts were made to burn the oil. However oil in water is normally too cold to burn properly, and is cooled down further by splashing waves.

Research is continuing on methods of combating oil spills. Governments acting on behalf of their populations are backing some research. A lot of it is being undertaken by oil companies who see that they have a responsibility to the environment, and who do not want to damage their business prospects by bad public relations.

From: *Man – made Disasters,* John E. Butler

Questions :

(a) In not more than 110 words write a description of the methods used to remove oil from beaches and seas after an oil spill.

(b) In 50 words, summarize the limitations of methods used to control oil spills.

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