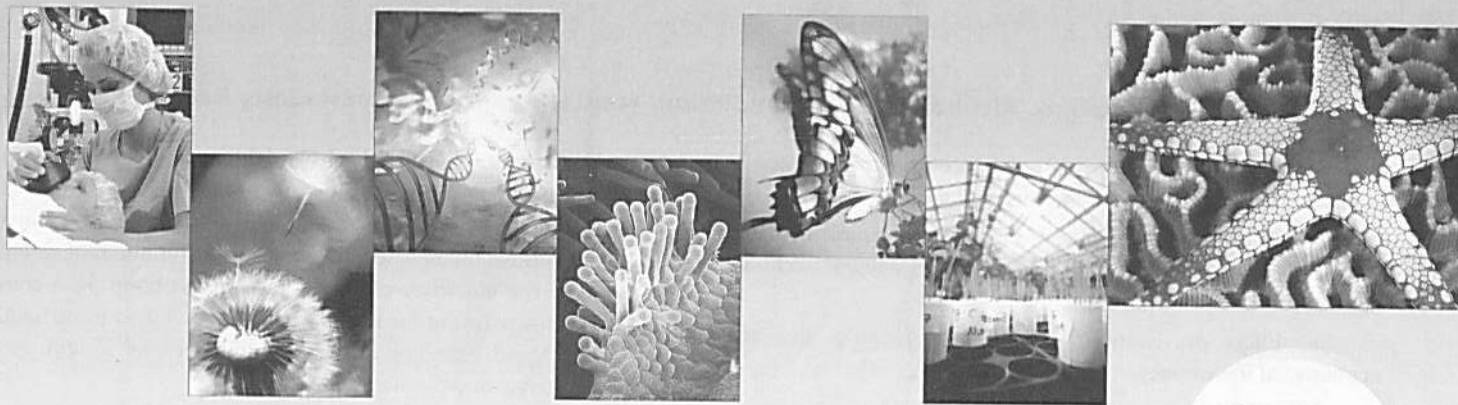




Chapter

8.3

Smoking, Alcoholism, Drug addiction, Mental health and Community health

Smoking

Smoking of tobacco dried and cured leaves of plant '*Nicotiana glauca*' and *N. rustica* in the form of cigars, cigarettes, bidis etc. is very toxic to the body. Smoke of tobacco contains about 300 compounds. The main compounds are nicotine, CO, HCN, polycyclic aromatic hydrocarbons, certain other stimulating products etc. **Nicotine** in the blood stimulates the nervous system, relax the muscles, release adrenaline hormone and increase the rate of heart beat. In pregnant ladies growth of foetus decreases and loss of weight may takes place.

Tobacco : The tobacco was first smoked by Red Indians in America. It then spread to European countries in the early 1600's, and today a large part of the world population smoke tobacco, while some others chew it.

Effect of Nicotine : Smoking was reported to produce a feeling of tranquility (calmness) and in some cases made people alert and active. Since in its early days the use of tobacco was socially accepted and no harmful effects were obvious, the addiction became widespread. But scientific research indicates that use of tobacco is harmful. **Nicotine** is the major stimulatory component of tobacco products including cigarettes. It is highly poisonous. The amount present in one cigar can be fatal, if it is injected intravenously into a person. When smoked, about 10 percent of the smoke is inhaled. Nicotine has a number of effects on the human body. It stimulates passage of nerve impulses, causes muscles to relax and causes the release of adrenaline, increasing both blood pressure and heart beat rate. The increased blood pressure caused by smoking leads to increased risk of heart diseases. In pregnant women nicotine causes retardation of the growth of the foetus.

Other Harmful Components of Tobacco Smoke : Besides the nicotine the tobacco smoke contains carbon monoxide, polycyclic aromatic hydrocarbons and tar.

Diseases Caused by Smoking : Smoking causes the following diseases.

(1) **Cancer** : Benzpyrene present in tobacco smoke is carcinogenic. About 95% victims of lung cancer are due to smoking. Reverse smoking causes oral cancer. In reverse smoking the burning end of the cigar is kept in the mouth. Reverse smoking is common in the villages of Andhra Pradesh. Bidi smoking causes cancer of tongue, pharynx (throat), larynx, tonsils and oesophagus. Lip cancer is caused by cigar and pipes. Tobacco chewing leads to oral cancer.

(2) **Cardio-vascular Diseases** : Tobacco smoking causes increase of adrenalin secretion which increases blood pressure, heart beat rate by constricting the arteries. High blood pressure increases the chances of heart diseases. Nicotine damages the bicuspid valve (mitral valve) of the heart.

(3) **Emphysema** : Tobacco smoke may break down the walls of alveoli of the lungs, decreasing the surface area for gas exchange, causing emphysema.

(4) **Coughing and Bronchitis** : Tobacco smoking irritates the mucus membrane of the pharynx (throat) and bronchi causing coughing and bronchitis.

(5) **Pulmonary Tuberculosis** : Smoking can spread bacteria of pulmonary tuberculosis from infected person to healthy persons.

(6) **Gastric and Duodenal Ulcers** : Smoking increases the secretion of gastric juice containing HCl. Excess of HCl causes gastric and duodenal ulcers.

(7) **Effect on Immune System** : Smoking reduces immunity of the body.

(8) **Decrease in Oxygen carrying Capacity** : Carbon monoxide of tobacco smoke rapidly binds haemoglobin of RBC and causes CO-poisoning which reduces oxygen carrying capacity of haemoglobin.

(9) **Other Effects of Smoking** : Tobacco smoking has other effects.

(i) **Effect on other Persons** : Tobacco smoking annoys non-smokers. It may prove even more harmful to nonsmokers.

(ii) **Effect on Personality** : Lips of the smoker may get coloured. Teeth and fingers may become stained and breath becomes foul.

(iii) **Effect on Economy** : Tobacco smoking also affects economy of the smoker.

Alcoholism

Regular consumption of alcohol either in low concentration (beer, wine, etc.) or in high concentration (brandy, whisky, rum, gin, Vodka, etc.) causes dependency on alcohol which is called alcoholism. The person who has become a habitual drinker is called an alcoholic.

Ethyl alcohol is consumed as fermented beverages with low content of alcohol (beer, wine, toddy) and as distilled beverages with a relatively high alcohol percentage (brandy, rum, whisky, gin, vodka). This alcohol is rapidly absorbed from the wall of stomach and enters the blood stream within minutes of ingestion. In the liver alcohol is converted into a more toxic substance – acetaldehyde.

The organ which is most affected by alcohol, is Liver.

Intoxication begins from the first sip of drink containing alcohol but early signs are not visible. With the increase in its dose the body loses its control and, gradually, the individual loses his consciousness and in extreme cases death may occur. People who get into the habit of drinking begin with a small dose, but soon many of them become addicted and they start consuming alcohol frequently and in large quantities. When they come to realize that they have become the victims of the hazards of alcohol, then it is too late for them to give up the habit.

Research studies have revealed that the people who resort to drinking offer one or more of the following reasons: (1) Social pressure, (2) Feeling of independence, (3) Liking of the taste, (4) Desire of excitement, (5) Desire to escape from such realities of life as disappointments and failures, and (6) hardships and monotony of everyday life.

When a person drinks alcohol, it passes to the stomach. Some amount of alcohol is also carried to the small intestine. Alcohol is quickly absorbed in the stomach and upper part of small intestine and is transferred to the blood. This blood carries alcohol to the liver. Liver synthesises fat from alcohol. The excess fat reduces the formation of glycogen, enzymes and structural proteins. The liver is an important centre of carbohydrate, fat and protein metabolism. But due to excess of fat in the liver, the liver becomes only a store house of fat. From the liver alcohol follows the following route through blood. Liver → heart → lungs → heart → various body parts (tissues). Its oxidation starts so that some amount of energy is produced which gives false impression of warmth in the skin.

Many people think that alcohol is a stimulant. But alcohol is not a stimulant. Actually alcohol acts as sedative (lessens functional activity), analgesic (relieves pain) and anaesthetic (causes loss of sensation).

Effects of Alcohol : It has been proved that the intake of alcohol affects individual health, family life and ultimately creates several community and social problems.

(1) Effects on Individual Health

(i) **Effect on Nervous System** : Many people drink alcohol for some “stimulation”, but in reality it depresses the nervous system, thus acting as a sedative, analgesic and anaesthetic agent. It reduces the efficiency of every tissue of the body. In a chronic alcoholic the axons of the nerve are inflamed, thus causing neuritis. The prolonged effect of alcohol on the nervous system causes various mental and physical symptoms.

(ii) **Effect on Heart** : Alcohol no doubt provides more energy and produces heat in the body, but, at the same time, it dilates the blood vessels. Thus, the heat generated is quickly lost. Due to constant dilation, the arterial walls soon become brittle and rigid. Such a change in the property of blood vessels and deposition of alcoholic fat affect the working of the heart.

(iii) **Effect on Stomach** : A small quantity with low concentration of alcohol stimulates the secretion of gastric juice. But an increased quantity with higher concentration has the opposite effects. Alcohol affects the lining of the stomach and causes inflammation. In most cases, the drinkers (specially those who drink on an empty stomach) become the victims of gastritis.

(iv) **Effect on Liver** : The most important organ which is damaged by alcohol is the liver. The liver is the storehouse of glycogen but alcohol causes the storage of fat in the liver. It causes fatty liver syndrome. Gradually, the liver hardens and dries up as its cells are replaced by a fibrous tissue. This kind of liver degeneration is called cirrhosis. Once the liver is damaged, it affects the other organs of the body also.

(v) **Effect on Kidneys** : Kidneys are overworked in eliminating the excess water often taken with alcohol.

(vi) **Effect on immunity** : The users of alcohol neglect their health and soon the body loses its resistance to infections. The alcoholics are in most cases victims of malnutrition and are easily susceptible to disease like pneumonia.

(vii) **Effect on level of sugar in blood** : Lowering of blood level. (Hypoglycemia)

(2) **Effect on the Family** : The consumption of alcohol not only creates problems to the drinker but directly or indirectly affects the family and community life. Alcoholic drinks are costly and most drinkers, because of their selfish habit, deprive their children and other members of the family of the basic needs. Thus, they create health and other problems.

(3) **Effect on Society (Community)** : The drinking of alcohol is invariably associated with social crimes and dissolution of moral and cultural inhibitions. Violence and other corrupt practices in the community are often directly or indirectly due to the consumption of alcohol. The intake of alcohol increases the rate of industrial accidents and decreases production. Traffic accidents are often due to drunken drivers. Illegal activities like production and selling of illicit liquor increases antisocial activities.

Driving and drinking do not go together : It is due to the following facts :

(1) **Alcohol affects judgement** : A person's ability to judge distance is distorted.

(2) **Alcohol affects coordination** : Coordination of the limbs, the head and the eyes are impaired affecting the driver's control of the car.



(3) **Alcohol affects alertness** : A driver becomes less watchful and fails to observe objects outside his vehicle.

(4) **Alcohol affects vision** : Vision becomes blurred and unsteady. Often the field of vision is reduced (Tunnel Vision).

(5) **Alcohol increases reaction time** : The driver takes more time to react to unexpected situations, e.g., a child running across a street.

(6) **Alcohol affects behaviour** : Intoxicated drivers become rash, careless and erratic. They tend to speed and take risks.

Drug Addiction

(1) **Drug Addiction** : Drugs are normally used for the treatment of diseases. The prolonged use of drugs may lead to the dependence of the body on them. This is drug addiction. Some people without any medical advice, start taking drugs and soon become drug addicts. Certain drugs form habit, but some make the body completely dependent upon them.

(2) **Addiction** : Some persons are unable to bear tensions or think themselves unable to solve the problems of life or due to certain other curious factors start drinking, smoking and taking certain narcotic drugs and feel relief and peace. Gradually this becomes their habit and they are addicted to these things.

Thus addiction can be defined as a physical and mental dependence on any of the above mentioned factors and get temporary relief and feel pleasure.

(3) **Drugs** : The compounds used for the cure of the diseases are known as drugs. Certain drugs of specific category are nerve stimulants and depressants. Some of the drugs function as sedative and others act as hallucinogens.

The regular use of such drugs causes the drug addiction in human and they become habitual of these drugs. Drugs such as aspirin and antihistamines when taken with alcohol may have dangerous effects. Including death.

Types of Drugs : There are a large number of drugs on which people become dependent. On the basis of their mode of action on the brain, these drugs are of four types :

(1) **Sedatives and Tranquillisers** : These drugs depress the activities of the central nervous system. They give a feeling of calmness, relaxation or drowsiness in the body. Their higher doses induce sleep. Tranquillisers lower tension and anxiety without inducing sleep. Examples : barbiturates and benzodiazepines (e.g., Valium).

Barbiturates are synthetic drugs derived from barbituric acid and are called sleeping pills.

(2) **Opiate Narcotics** : These drugs suppress brain activity and relieve pain. They are called painkillers. Examples opium and its derivatives and some synthetic drugs (e.g., pethidine and methadone).

Opium and its Derivatives : Opium is the extract from the unripe capsules of the poppy plant (*Papaver somniferum*). It has bitter taste. The opium addict loses weight, fertility and interest in

work. Its derivatives are morphine, codeine and heroin. Opium derivatives immediately reduce respiratory and cardiovascular activity, constricts the pupils of the eye, reduce the visual activity and cause nausea and vomiting. An overdose leads to respiratory arrest and death. If the supply of the drug is not available, the addicts exhibit terrible "with-drawal symptoms" in the form of muscle cramps, running nose, vomiting and epilepsy.

(i) **Morphine and Codeine** : These are derived from opium. Morphine is a most valuable analgesic but it causes addiction. Codeine is a mild analgesic but causes no addiction so codeine is commonly used in many medicines and cough syrups.

(ii) **Heroin (Diacetylmorphine or Diamorphine)** : Heroin is formed from morphine by acetylation. It is highly addictive and, therefore, considered most dangerous opiate. It is banned even for medical use. It is used in research. Heroin is taken orally or inhaled or injected. As the heroin addicts are careless about the needles and syringes so they can cause blood poisoning, serum hepatitis and AIDS.

(3) **Stimulants** : These drugs stimulate the nervous system; make a person more wakeful, alert and active; and cause excitement. The stimulants include caffeine, cocaine and amphetamines.

(i) **Caffeine** : It is an alkaloid derived from the leaves of tea plant (*Thea chinensis*), seeds of coffee plant (*Coffea arabica*) and seeds of Cocoa plant (*Theobroma cocoa*). Tea plants and coffee plants are shrubs while cocoa plants are trees. Caffeine is a mild stimulant and is commonly taken as beverages – tea, coffee, coca and cola drinks. It increases alertness and thought. As it is mild stimulant, it is used in medicines as a cardiac stimulant. Its excessive use causes addiction.

(ii) **Cocaine** : It is extracted from the leaves and young twigs of the South American shrub *Erythroxylon coca*. Cocaine is used as local anaesthetic and stimulant. The bad effects are lack of sleep, loss of appetite and hallucination which ultimately lead to damaged mental functions and insanity. The misuse may also produce severe headache, convulsion or death due to cardiovascular or respiratory failure.

(iii) **Amphetamines** : These are synthetic drugs, which are strong stimulants. Amphetamines are taken by truck drivers and night workers to keep awake. They do not remove fatigue. However, they impair vision and judgement of distance.

(4) **Hallucinogens** : These drugs change thoughts, feelings and perceptions of an individuals. Hallucinogens (drugs) cause hallucinations (illusion of seeing objects or hearing sounds, etc., not actually present). They include chemicals such as LSD. (Lysergic acid diethylamide), mescaline, psilocybin and products of hemp plant.

(i) **LSD (Lysergic acid diethylamide)** : It is derived from *Ergot fungus*. It is most powerful hallucinogen which causes horrible dreams, chronic psychosis, and severe damage to the central nervous system. LSD also brings about chromosomal and foetal abnormalities.

(ii) **Products of Hemp Plant** : Bhang (hashish), ganja and charas are three drugs obtained from the dried leaves and flowers

1392 Smoking, Alcoholism, Drug addiction, Mental health and Community health

of the hemp plant (*Cannabis indica*) commonly called bhang. Another drug Marijuana is derived from another species of hemp plant (*Cannabis sativa*). Immediately after the intake of these drugs, the pupils of the eye dilate, blood sugar level rises and frequency of urination increases. These drugs are often mixed with tobacco and smoked. Compared to the other drugs, these drugs

may appear to be less harmful, but these may lead to the opiates (opium group) addiction. They are dangerous if taken along with alcohol. Some of these drugs (e.g., Marijuana) cause anxiety and may lead to psychosis.

❑ Marijuana is Hallucinogen.

Table. 8.3-1 : Major Groups of Psychotropic Drugs with Examples and Effects

S.No.	Type of Drug	Examples	Effects
1.	Sedatives and tranquillisers (depressant)	Benozodiazepines (e.g., Valium Barbiturates)	Depress brain activity and produce feelings of calmness, relaxation, drowsiness and deep sleep (high doses).
2.	Opiate narcotics	Opium, Morphine, Heroin, Pethidine, Methadone	Suppresses brain function, relieves intense pain.
3.	Stimulants	Caffeine (very mild), Cocaine, Amphetamines	Stimulates the nervous system; makes a person more wakeful, increases alertness and activity, produces excitement.
4.	Hallucinogens	LSD, Mescaline, psilocybin, Bhang (Hashish), Ganja Charas, Marijuana	Alters thought, feelings and perceptions cause illusions.

Combinations of Drugs : Some drug addicts use mixtures of drugs to have immediate effect. Combination of alcohol and barbiturates causes increased depressant effect. Mixture of alcohol and antihistamines produces marked drowsiness. Combination of alcohol and valium causes increased

sedative effect. Mixture of alcohol and marijuana produces decreased coordination and impaired judgement. Combination of alcohol and aspirin causes increased chances of damage to gastric mucosa.

Table. 8.3-2 : Alcohol-Drugs Interaction

S.No.	Combination	Effect
1.	Alcohol + barbiturates	Dramatically increased depressant effect
2.	Alcohol + antihistamines	Marked drowsiness
3.	Alcohol + Valium	Rapid increase in sedative effect
4.	Alcohol + Marijuana or Hashish	Decreased coordination, increased reaction time, impaired judgement
5.	Alcohol + Aspirin	Increased risk of damage to gastric mucosa.

Effect of Drug Addition on Family, Society and Addicts : The drug-users not only themselves suffer from the ill-effects of drug addiction, they also bring miseries to the entire family. Since they get the supply of the drugs from illegal sources, they encourage smuggling and other associated illegal activities, resulting in several other social problems. It is evident that all the drugs affect the central nervous system and their prolonged use causes permanent damage. The body fails to work without the drugs. Ultimately other organs also get damaged, and the drug-users become victims of various diseases. There are several reasons causing drug addiction.

(1) **Curiosity :** Frequent reference to drugs in newspapers, literature and on radio makes a person curious to have personal experience of the taste of a particular drug.

(2) **Peer group pressure :** Constant description by friends about the "good feeling" creates a temptation. Such inspiration from friends and peer groups acts as a pressure to start with drugs.

(3) **To overcome frustrations and depressions :** The desire to get solace or relief from personal problems initiates the

use of drugs. The school children who take refuge in drugs are usually lonely, unloved and insecure.

(4) **Excitement and adventure :** It is natural for the young to look for some exciting work. The intake of drug being illegal satisfies that feeling of excitement and adventure.

(5) **Looking for a different world :** Some people believe that drugs open up a new world of perception. It increases the ability to appreciate the aesthetic beauties, helps in intellectual enlightenment and creativity.

(6) **Desire to do more physical or mental work :** Some people use drugs to increase their working power. Many students use drugs to work whole night before examinations. In most cases this leads to mental-breakdown.

(7) **Persistent use to get relief from pain :** People suffering from pain often take drugs for relief. Such persistent use is sometimes based on medical prescription. This practice makes them addicts.

(8) **Family history :** Examples of parents or members of the family using drugs act as the most natural stimulant.

Mental Health

There is a general feeling that if you are and not ill you are healthy. A truly healthy person is the one who has a sound body, lives in harmony with others, has the ability to face stresses and strains and holds certain moral and spiritual values. Body and mind are intimately related. Any disturbance in one has its effect on the other. Like the body, mind too can become ill.

It is estimated that 1 percent of the world population suffers from serious mental illness and 10 percent from mild mental disorders. In India, there are 6 –7 million people with incapacitating mental disorders.

Characters of Mentally Healthy Person

If potential conflicting instinctive drives. A mentally healthy person has (1) Self respect. (2) Knowledge of one's capabilities and limits. (3) Independent personality but comfortably placed in hierarchy in work, family and society. (4) Feeling of friendship and trust for others. (5) A purposeful life with reasonable goals to achieve. (6) Potential to perform all the daily chores and not dependent on any other person. (7) No tendency in decision making to get swayed away by emotions, fear, anger, love or guilt. (8) Ability to meet all the demands of life, solving problems as they arise.

Mental illness

It is a state of mind in which a person is not able to think, behave and interact with others normally. Onset of mental illness is exhibited by (1) Changes in behaviour and personality due to abnormality of thoughts, memory, feelings, perception and judgement. (2) Difficulty in adjustment with family members and colleagues. (3) Inability to carry on daily business, with signs of tension, trembling, depression, aggressive behaviour, fear, phobia, etc. There is thus social and vocational malfunctioning.

Characters of Mentally Sick Person

(1) Inability to concentrate. (2) Absence of sound sleep. (3) Worrisome behaviour. (4) Short temper. (5) Unhappiness. (6) Mood fluctuations from depression to elation. (7) Tendency to get upset by a change in routine. (8) Apprehensive nature. (9) Bitterness. (10) Dislike of others. (11) Considering others to be wrong. (12) Children getting on nerves. (13) Feeling of pains / aches in different body parts without any actual ones.

Types of Mental illness

Mental illness can be grouped under three broad categories – psychosis, neurosis and mental disorders.

(1) **Psychosis / Insanity / Madness** : It is a serious type of mental illness in which the patient loses touch with reality. Psychosis may be caused by disease of central nervous system. In some cases it is associated with diabetes, hypertension and tuberculosis. The patient is not aware of illness and refuses to take the treatment.

(2) **Neurosis** : It is less severe form of mental illness where the patient is aware of the problem and tries to seek help. There is abnormal anxiety, fear, sadness, vague aches and pains. Neurosis develops due to stress and anxiety in patient's environment. The patient shows excessive / prolonged reaction to a given stress, e.g., anxiety neurosis, hysteria, obsessional neurosis, reactive depression. All of us have tendency to become neurotic. Rather neurosis is mode of overcoming certain problems like worry, fear, anxiety, feeling of insecurity, etc.

(3) **Mental Disorders** : The disabilities are caused by physical, physiological and psychological defects like (i) Injury (ii) Infection from worms tuberculosis, measles, leprosy or encephalitis. (iii) Nutritional deficiency during development of infant. (iv) Radiation damage during neural development. (v) Toxicity of lead and mercury. (vi) Degeneration due to ageing. (vii) Tumours or neoplasms. (viii) Poor availability of oxygen glucose / blood supply. (ix) Excessive intake of alcohol. (x) Excessive use of psychotropic drugs.

(i) **Epilepsy** : It is a mental illness characterised by abnormal electrical discharge in a part of brain often leading to warning cry, fits of convulsions like jerking, stiffness, tongue biting sensory changes, loss of bladder and bowel control, ending in loss of consciousness falling down and sleep. The condition of epileptic attack is called seizure. It may recur with biorhythm, photic stimulation, musical composition, tactile stimulation, reading, etc. Proper treatment can cure epilepsy in most of the cases.

(ii) **Parkinson's Disease** : (Paralysis Agitans; Parkinson, 1817). It is a sporadic disorder of middle and late life which is characterised by stooped posture, stiffness and slowness of movements, fixity of facial expression and rhythmic tremor of limbs (most pronounced in hands) which subsides on relaxation or actively willed movement. Relief can be obtained through regular medicine, physiotherapy and surgery.

(iii) **Alzheimer's Disease** : A progressive degenerative disease of brain which is caused by senile plaques and neurofibrillary tangles resulting in loss of choline acetyltransferase activity. First signs are subtle changes in personality, memory disturbance and trembling of hands. It is followed by progressive increase in dementia over next 5 – 10 years. The disease commonly appears after the age of 40, though it can occur in any age group.

Schizophrenia : It is a type of mental illness or psychotic disorder which is characterised by progressive deterioration of personality, shallowness of emotional life, auditory hallucinations, delusions, illogical thinking, sense of being influenced by others and feeling of being controlled by outside forces. Schizophrenia can be caused by excessive dopamine production, alterations in neuropeptides, increased ventricular brain ratios and decreased frontal lobe activity. Recovery is possible with regular use of chlorpromazine alongwith psychosocial therapy.

Causes of Mental illness : Mental illness is caused by a variety of factors acting singly or together. These cause are :

(1) **Changes in Brain :** See mental disabilities.

(2) **Home Atmosphere :** Fight, quarrel, cruelty and lack of warmth affection and accommodation in the family often lead to mental illness.

(3) **Hereditary Factors :** Tendency to develop mental illness is influenced by heredity. Chances of a schizophrenic child are 40 times higher from a schizophrenic couple than the normal one.

(4) **Childhood Experiences :** A balance of guidance, encouragement, affection, love, discipline and companionship is a must for healthy mental development of a child. Lack of any of them and repeated unpleasant experiences lead to mental illness.

(5) **Socio – Economic / Special Factors :** A number of Socio – economic factors lead to mental illness. They include disparities, hunger, poverty, injustice, lack of opportunities, cruelty, insecurity etc.

Treatment of Mental illness

Social Therapy : Mental health is governed to a large extent by adjustment of an individual in the community and the attitude of an individual towards the community. Sympathy shown by family members and community is extremely useful to an individual to overcome misery and adjust to stresses and strains. Curing a mental patient requires a lot of recreational opportunities, companionship, compassion and understanding by family members and society.

Psychotherapy : It is the treatment involving psychological techniques like psychoanalysis, discussion, explanation, reassurance, etc. Psychoanalysis (founded by Freud) is method of reviving past and forgotten emotional experiences of a person so as to find out the reason for mental illusion and helping the patient to readjust attitude to causal experiences. Group psychotherapy is also resorted where a group of mental patients are allowed to speak out their problems before a psychiatrist. Suggestions made by the different patients help individual to understand one's problems and their remedies.

(1) **Drugs / Psychochemotherapy :** A number of drugs are available to treat different types of mental illness, e.g., sedatives for promoting sleep, tranquilisers for reducing anxiety (e.g., valium or diazepam, larpose or lovazepam, sorapax or oxozepam, librium or chlorodazepoxide), antidepressants (e.g., trimpramine trazodone), antipsychotic (e.g., largactil or chlorpromazine, melleril or thioridazone, thiothixene, loxapine, clozapine, supiride) and anti-epileptic (e.g., epilex, carabadac, carbatol, epitil).

(2) **Shock Treatment/ECT (Electroconvulsive Therapy)** The treatment is useful in curing acute depression, acute mania, stupor (confusional state) and some types of schizophrenia. The treatment given by expert psychiatrists involves placing of electrodes on the head of the patient and providing an electric shock for a fraction of second by passing a current of definite voltage. It produces convulsion.

Prevention of Mental illness

(1) Companionship where worries and unpleasant experiences can be discussed.

(2) Occasional review of one's ideas in the light of experiences and view points of others.

(3) Awareness of assets and liability.

(4) Time for the family and children.

(5) Proper relaxation and sleep.

(6) Routine physical exercise.

(7) Avoiding undue mental strain.

(8) Healthy pastime.

(9) Proper estimate of one's potentiality.

(10) Creating small achievable goals.

Community Health

The individual is a part of community. Community health depends on active participation of its members. you have just read how a person can be helped by the community to stay away from addictions. The mental health of an individual also depends to a large extent on the way he adjusts himself to the community and the way the community helps him adjust to stresses and strains. The community plays a major role in the prevention and control of infectious diseases also.

Health centres

For community development and community health, the country has been divided (1st April, 1958) into 5000 blocks. On June 30, 1996, the rural areas of the country has 2424 Community Health Centres (each catering a population of 80,000 – 120,000 having 4 – 5 doctors, 30 bed hospital with laboratory and X-ray facility), 21854 Primary Health Centres (each catering a population 20000 – 30000, having a medical officer, one multipurpose female worker, one health educator, and supporting staff) and 132730 subcentres (one for 3000 – 5000 population, having one male and one female multipurpose workers). These health centres are operating under state governments.

A number of other health organisations are also providing basic health services like Central Government Health services (C.G.H.S.) dispensaries, Employees State Insurance (E.S.I.) hospitals, Indian Council of Medical Research (I.C.M.R.) Programmes, National Institute of communicable Diseases (N.I.C.D.) and a number of other national programmes/thrust areas like National Malaria Eradication Programme (N.M.E.P. started 1953 as part of 1st five year plan), National Filaria Control programme (N.F.C.P.), National Leprosy Control programme (N.L.C.P.), National Cholera Control programme N.C.C.P., National programmes for control of blindness/trachoma, cancer, AIDS, V.D., tuberculosis, etc.



W.H.O. (World Health Organization) also provides assistance and expertise for certain programmes.

Role of Health Centres

(1) **Medical care** : (i) Giving first aid to all emergencies. (ii) Providing curative medical services to both outdoor and indoor patients. (iii) Referring patients requiring specialised treatment to proper hospitals.

(2) Prevention and control of Communicable Diseases :

(i) Mass vaccination against various communicable disease like whooping cough, diphtheria, tetanus polio, tuberculosis, cholera, typhoid, etc. (ii) Coordinating with state and national agencies for programmes of malaria eradication, filaria, tuberculosis eradication, cholera control, leprosy control, V.D. control, trachoma control, AIDS control, etc. (iii) Taking special gatherings, exhibitions etc. (iii) Taking special precautionary measures during fairs, religious and political gatherings, exhibitions etc. (iv) Notification of the spread of epidemic diseases and measures to prevent the same, (v) Killing of mosquitoes, flies, rats, stray dogs, etc, (vi) Filling or covering of mosquito breeding places (vii) Inoculation of larger water bodies with larvicidal fishes, plants bacteria and cyanobacteria. (viii) Isolation of patients with highly infectious diseases. (ix) Supervision of eating places, food and milk trades for preventing spread of communicable disease.

(3) **Data Collection and Vital Statistics** : Community health workers collect and cross check data about (i) Spread of infectious diseases. (ii) Prevalence of deficiency disorders. (iii) Progress of national / regional health schemes. (iv) Public resistance, hesitation or apathy to new programmes. (v) Sanitation. (vi) Pollution (vii) Safe drinking water and safe edibles.

(4) **Maternity and Child Health (M.C.H.)** : (i) Training of dais / midwives. (ii) Guiding expectant mothers about problems related to pregnancy. (iii) Routine examination of pregnant woman. (iv) Antenatal care. (v) Inoculation against tetanus. (vi) Providing facility for child birth. (vii) Post-natal care. (viii) Milk feeding programme. (ix) Prophylaxis against anaemia and vitamin deficiency. (x) Immunisation of infants against common diseases. Child survival and Safe Motherhood (CSSM) programme has been introduced since 1992. The incidence of vaccine preventable diseases has declined since then.

(5) **Nutrition Education** : Information is provided by health official as to the requirement of various nutrients in persons of various ages, deficiency diseases, balanced diet, availability of nutrients in common foods, importance of green and yellow vegetables.

(6) **Sanitation** : (i) Providing safe, clean, germ free drinking water. (ii) Proper disposal of waste through proper

latrines, compost pits, soak pit, kitchen gardens, smokeless chullah. (iii) Prevention of water pollution. (iv) Prevention of air pollution. (v) Hygienic and healthy working conditions. (vi) Hygienic and healthy housing (vii) Capture of rabid animals. (viii) Prevention of insect breeding and other vector control. (ix) Uncontaminated food.

(7) **Community Health Education** : Community health education is related to knowledge about transmission, prevention and mechanism of control of communicable disease, development of important noncommunicable diseases, personal hygiene and addictions. It is carried out through (i) Personal contact. (ii) Pamphlets and other printed materials. (iii) Slides, charts, pictures, cinema, radio, T.V. and other audio – visual aids.

(8) **School Health Services** : They provide for (i) Medical check up of the child at the time of admission and regular check up later on at intervals. (ii) Treatment and follow up action for any disorder. (iii) Immunisation. (iv) Regular screening by class teacher. (v) Guidance in personal hygiene (vi) Health education. (vii) School sanitation. (viii) School facilities including safe drinking water, prevention of infection from common glasses, proper sitting lighting and ventilation, etc. (ix) Midday meals in certain areas.

(9) **Family Planning / Family Welfare** : Keeping the number of children per couple to 2 is to goal of family planning so that the size of Indian population becomes stable. Health centres give free (i) Family planning advice (ii) Family planning services.

National Immunisation Programme

With the success of small pox eradication programme, an impetus has been given to eradication of six preventable disease through universal immunisation programme. The six diphtheria, pertussis (whooping cough), polio, tetanus, tuberculosis and measles. The programme was launched by W.H.O. In May, 1974 and is expected to reach every child by 2000 A.D. In India, It was launched in 1985 with reaching every child in 1992. India has fixed the year 2000 A.D. as year of health for all.

Tips & Tricks

✍ Pulse Polio : Started in Dec. 1995/Jan. 1996 repeated in 1996 – 97, 1997 – 98, 1998 – 99, 1999 – 2000, 2000 – 2001, and 2001 – 2002 for simultaneous immunisation of all children against polio.

✍ Red Cross Day : 8th may.

✍ World Breast Feeding Week : 1 – 7 August.

✍ World Health Day : 7th April (since 1950).

Ordinary Thinking

Objective Questions

Smoking

1. Tobacco smoke contains carbon monoxide which
[NCERT; AIEEE Pharmacy 2003]
(a) Reduces the oxygen-carrying capacity of blood
(b) Causes gastric ulcers
(c) Raises blood pressure
(d) Is carcinogenic
2. Smoking addiction is harmful because it produces polycyclic aromatic hydrocarbons, which cause
[MP PMT 1999; Odisha JEE 2011]
(a) Reduction in oxygen transport
(b) Increase in blood pressure
(c) Cancer (Lung)
(d) Retardation of growth of foetus
3. The use of tobacco is originated in
(a) China (b) America
(c) Russia (d) Eastern India
4. Carcinogenic agent is
[MP PMT 1994]
(a) X-ray radiation (b) U.V. radiation
(c) Nicotine (d) All the above
5. Which one of the following is most carcinogenic present in tobacco smoke
[MP PMT 1994]
(a) Nicotine (b) Benzopyrene
(c) Caffeine (d) Tar

Alcoholism

1. Cirrhosis of liver is caused by the chronic intake of
[MP PMT 2009; CBSE PMT (Pre.) 2012]
(a) Opium (b) Alcohol
(c) Tobacco (Chewing) (d) Cocaine
2. Driving after drinking is not advised because due to intoxication
(a) Reaction time delays
(b) Judgment and co-ordination disturbs
(c) Affect behaviour and vision
(d) All of the above
3. Dilation of blood vessels, increase in fat synthesis, low blood sugar and inflammation of stomach are due to the consumption of
[CBSE PMT 1993]
(a) Tobacco
(b) Drug addiction
(c) Alcohol
(d) Tobacco and drug addiction
4. A person who is addict of alcohol gets his liver destroyed because
[MP PMT 1999, 2006]
(a) Liver stores excess of glycogen
(b) Liver stores excess of starch
(c) Liver stores excess of protein
(d) Liver stores excess of fat
5. Damage to gastric mucosa is increased by alcohol plus
(a) Valium (b) Marijuana
(c) Aspirin (d) Barbiturates

Drug Addiction

1. Opiate narcotic drugs are [J & K CET 2008]
(a) Antianxiety (b) Analgesic
(c) Hypnotic (d) Antihistamine
2. The drug useful to increase cardiovascular effects in human beings is [J & K CET 2008]

Or

Which one of the following is a stimulant

[Kerala PMT 2004; J & K CET 2010]

- (a) Cocaine (b) Barbiturate
(c) Benzodiazepine (d) Insulin
3. Use of anti-histamines, adrenaline and steroids give a quick relief from [NCERT; CBSE PMT 2009]
(a) Allergy (b) Nausea
(c) Cough (d) Headache
4. Benzo-diazepene is an [AFMC 2008]
(a) Antidepressant (b) Antipsychotic
(c) Antianxiety drug (d) Sedative
5. Which one of the following is the correct statement regarding the particular psychotropic drug specified [CBSE PMT 2008]
(a) Morphine leads to delusions and disturbed emotions
(b) Barbiturates cause relaxation and temporary euphoria
(c) Hashish causes after thought perceptions and hallucinations
(d) Opium stimulates nervous system and causes hallucinations
6. ECT is
(a) An apparatus for epilepsy
(b) A drug which acts as sedative
(c) Shock treatment
(d) Artificial organ for human
7. Match the following and choose the correct answer

Column I	Column II
(A) Phobia	(1) Maladaptive habit
(B) Neurosis	(2) Undue concern about health
(C) Hypochondria	(3) Lack of sleep
(D) Insomnia	(4) Intense fear

[Kerala PMT 2009]

(a) (A) — (2), (B) — (1), (C) — (4), (D) — (3)
(b) (A) — (2), (B) — (1), (C) — (3), (D) — (4)
(c) (A) — (4), (B) — (1), (C) — (3), (D) — (2)
(d) (A) — (3), (B) — (4), (C) — (2), (D) — (1)
(e) (A) — (4), (B) — (1), (C) — (2), (D) — (3)
8. Which of following is a hallucinogen [BHU 2008; NEET (Karnataka) 2013]
(a) Lysergic acid diethylamide (b) Psilocybin
(c) Mescaline (d) All of these



9. Which of the following options are correct

1.	Heroin	–	Stimulant
2.	Marijuana	–	Cardiovascular
3.	Cocaine	–	Hallucinations
4.	Morphine	–	Sedative

[MHCET 2015]

- (a) 1, 2 and 3
(b) 1, 3 and 4
(c) 2, 3 and 4
(d) 1, 2 and 4

10. Heroin is [RPMT 2006; Kerala PMT 2008]

- (a) Diacetyl morphine
(b) Triacetyl morphine
(c) Tetra acetyl morphine
(d) Mono acetyl morphine

11. Opium, morphine, heroin, pethidine and methadone are collectively called as [AFMC 2008]

- (a) Tranquillisers
(b) Stimulants
(c) Hallucinogens
(d) Opiate narcotics

12. Hallucinogens

- (a) Are nerve depressants
(b) Are nerve stimulants
(c) Alter thoughts, feelings and perceptions
(d) Are pain relievers

13. 'Marijuana' is extracted from [NCERT]

- (a) Dried leaves and flowers of hemp plant
(b) Ergot fungus
(c) Hemp plant (*Cannabis sativa*)
(d) Cocoa plant

14. The rejection of organ transplanting in human is prevented by using [Kerala CET 2003]

- (a) Aspirin
(b) Cyclosporin
(c) Calcitonin
(d) Thrombin

15. Drugs that cause malformation in embryo during pregnancy are called [Kerala CET 2003]

- (a) Tranquillizers
(b) Teratogens
(c) Alcoholic beverages
(d) Nicotin

16. Which of the following is an opiate narcotic [CBSE PMT 1997]

Or

Naloxone is used as an antidote intravenously for the over dose of [Kerala CET 2003]

- (a) Barbiturates
(b) Morphine
(c) Amphetamines
(d) LSD

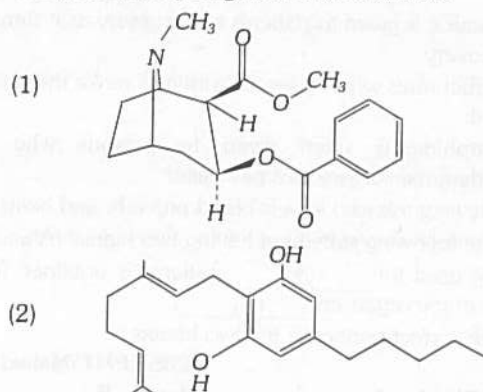
17. Amnesia is [NCERT]

- (a) Loss of memory
(b) Loss of filtration capacity of kidney
(c) Loss of appetite
(d) Loss of blood

18. Which of the following stimulates the heart [MP PMT 2006]

- (a) Mescaline
(b) Epinephrine
(c) LSD
(d) Hashish

19. Identify the molecules (1) and (2) shown below and select the right option giving their source and use



Options [NCERT; CBSE PMT (Mains) 2012]

	Molecule	Source	Use
(a)	(1) Cocaine	<i>Erythroxylum coca</i>	Accelerates the transport of dopamine
(b)	(2) Heroin	<i>Cannabis sativa</i>	Depressant and slows down body functions
(c)	(2) Cannabinoid	<i>Atropa belladonna</i>	Produces hallucinations
(d)	(1) Morphine	<i>Papaver somniferum</i>	Sedative and pain killer

20. Ingestion of marijuana leads to illusions and alters the thoughts, feelings and perceptions of a person. Marijuana is a [MP PMT 1994]

Or

Addiction of LSD will eventually leads to

[CMC Vellore 1993; MP PMT 1996]

- (a) Narcotic
(b) Stimulant
(c) Hallucinogen
(d) Sedative

21. Which is the particular type of drug that is obtained from the plant whose one flowering branch is shown below [CBSE PMT 2014]



- (a) Stimulant
(b) Pain-killer
(c) Hallucinogen
(d) Depressant

22. 'Valium' is an example of

- (a) Benzodiazepines
(b) Barbiturates
(c) Stimulants
(d) Hallucinogens

23. The drugs used by weight conscious peoples to reduce appetite and increase alertness are

- (a) LSD
(b) Morphine
(c) Amphetamines and cocaine
(d) Aspirin

24. Select the correct statements from the ones given below
[CBSE PMT (Pre.) 2010]

- (a) Cocaine is given to patients after surgery as it stimulates recovery
- (b) Barbiturates when given to criminals make them tell the truth
- (c) Morphine is often given to persons who have undergone surgery as a pain killer
- (d) Chewing tobacco lowers blood pressure and heart rate

25. Read the following statement having two blanks (A and B)
"A drug used for (A) patients is obtained from a species of the organism (B)."

The one correct option for the two blanks is

[CBSE PMT (Mains) 2011]

Blank - A

- (a) Swine flu
- (b) AIDS
- (c) Heart
- (d) Organ-transplant

Blank - B

- Monascus*
- Pseudomonas*
- Penicillium*
- Trichoderma*

26. Which of the following secondary metabolites is a drug

[Kerala PMT 2012]

- (a) Abrin
- (b) Ricin
- (c) Carotenoids
- (d) Concanavalin
- (e) Vinblastin

27. Sports persons are frequently accused of abusing the drug known as
[BHU 2012]

Or

Sleep is prevented by

- (a) Morphine
- (b) Cocaine
- (c) Heroin
- (d) Amphetamine

28. Select the option having all correctly matched pairs

- A. Alkaloids (i) Carotenoid; Anthocyanin
- B. Pigments (ii) Vinblastin; Curcumin
- C. Drugs (iii) Morphine; Codeine

[AIIMS 2012]

- (a) A-i; B-ii; C-iii
- (b) A-ii; B-iii; C-i
- (c) A-iii; B-i; C-ii
- (d) A-i; B-iii; C-ii

Mental health and Community health

1. Which are intimately related
 - (a) Disease and health
 - (b) Body and health
 - (c) Body and mind
 - (d) Body and spiritual values
2. Neurasthenia refers to
[Kerala PMT 2008]
 - (a) Undue concern about health
 - (b) Traumatic experience like rape
 - (c) Disorder of sensory perception
 - (d) Mental inability to concentrate on or enjoy things
 - (e) A mood upswing
3. The psychological disorder, which is characterized by sadness, hopelessness, low self-esteem, decline in interest, energy, concentration and changes in sleep pattern and appetite is called
[Kerala PMT 2007]
 - (a) Anxiety disorder
 - (b) Obsessive-compulsive disorder
 - (c) Attention deficit disorder
 - (d) Mood disorder
 - (e) Borderline Personality disorder

4. Psychoanalysis was founded by

- (a) Jenner
- (b) Parkinson
- (c) Freud
- (d) Hansen

5. In Huntington's chorea, limb movements are

- (a) Rhythmic
- (b) Arrhythmic
- (c) Slow & hardly noticeable
- (d) Absent

6. Loss of choline acetyltransferase occurs in

- (a) Schizophrenia
- (b) Huntington's disease
- (c) Parkinson's disease
- (d) Alzheimer's disease

7. Neurosis is characterised by

- (a) Madness
- (b) Prolonged emotional reaction to a stress
- (c) Pain in the head
- (d) Fits of convulsions

8. In epilepsy, seizure is

- (a) Warming cry
- (b) Fit of convulsions
- (c) Loss of consciousness
- (d) All the above

9. Melanin and lewy bodies occur in the neurons in case of

- (a) Huntington's chorea
- (b) Alzheimer's disease
- (c) Paralysis agitans
- (d) All the above

10. Paralysis agitans is

- (a) Epilepsy
- (b) Parkinson's disease
- (c) Poliomyelitis
- (d) Alzheimer's disease

11. Social therapy of mental illness is required for

- (a) Treatment of psychosis
- (b) Maintenance of community health
- (c) Rehabilitation of mentally ill persons
- (d) Prevention of addiction

12. A person showing unpredictable moods, outbursts of emotion, quarrelsome behaviour and conflicts with others is suffering from
[CBSE PMT 2006]

- (a) Mood disorders
- (b) Addictive disorders
- (c) Schizophrenia
- (d) Borderline personality disorder (BPD)

Critical Thinking

Objective Questions

1. Nicotine acts as a stimulant because it mimics the effect of
[CBSE PMT 1995]
 - (a) Thyroxine
 - (b) Acetylcholine
 - (c) Testosterone
 - (d) Dopamine
2. Belenophobia is the fear of
[AFMC 2008]
 - (a) Dust
 - (b) Depth
 - (c) Needles
 - (d) Water
3. Tay Sach's disease is caused by deficiency of
[AMU (Med.) 2006; AIIMS 2009]
 - (a) Hexosaminidase
 - (b) Glucocerebrosidase
 - (c) Galactocerebrosidase
 - (d) Ceramidase



4. Tunnel vision is caused by [BVP 2003]
 - (a) Drug addiction
 - (b) Use of tobacco
 - (c) Use of alcohol
 - (d) Use of LSD
5. Women who consumed the drug thalidomide for relief from vomiting during early months of pregnancy gave birth to children with [AIIMS 2004]
 - (a) No spleen
 - (b) Hare-lip
 - (c) Extra fingers and toes
 - (d) Underdeveloped limbs
6. The synthetic drug structurally similar to adrenalin are [NCERT; Kerala PMT 2004]
 - (a) Amphetamines
 - (b) Barbiturates
 - (c) Hallucinogens
 - (d) Nicotinic derivatives
 - (e) Analgesics
7. When a person dies after stung by a bee following by the administration of penicillin, death may be due to [NCERT; Kerala PMT 2004]
 - (a) Prophylactic shock
 - (b) Anaphylactic shock
 - (c) Autoimmunity
 - (d) Sedation
 - (e) None of these
8. Which one of the following depresses brain activity and produces feelings of calmness, relaxation and drowsiness [NCERT; CBSE PMT 2005]
 - (a) Valium
 - (b) Morphine
 - (c) Hashish
 - (d) Amphetamines
9. Smack and Crack are produced from [KCET 2015]
 - (a) *Cannabis sativa* and *Papaver somniferum*
 - (b) *Cannabis sativa* and *Atropa belladonna*
 - (c) *Erythroxylon coca* and *Atropa belladonna*
 - (d) *Papaver somniferus* and *Erythroxylon coca*
10. In heavy smokers the alveoli of the lungs are enlarged and damaged which reduces the surface area for the exchange of respiratory gases. This condition is called [Kerala PMT 2004]
 - (a) Asthma
 - (b) Silicosis
 - (c) Emphysema
 - (d) Anosmia
 - (e) Bronchitis
11. The secondary metabolite obtained from *Catharanthus roseus* [MHCET 2015]
 - (a) Vincristin
 - (b) Anthocyanin
 - (c) Menthol
 - (d) Nicotine
12. 'Smack' is a drug obtained from the [NCERT]
 - (a) Latex of *Papaver somniferum*
 - (b) Leaves of *Cannabis sativa*
 - (c) Flowers of *Dhatura*
 - (d) Fruits of *Erythroxyl coca*
13. Tobacco consumption is known to stimulate secretion of adrenaline and nor-adrenaline. The component causing this could be [NCERT]
 - (a) Nicotine
 - (b) Tannic acid
 - (c) Curamin
 - (d) Catechin

Assertion & Reason

Read the assertion and reason carefully to mark the correct option out of the options given below:

- (a) If both assertion and reason are true and the reason is the correct explanation of the assertion.
 - (b) If both assertion and reason are true but reason is not the correct explanation of the assertion.
 - (c) If assertion is true but reason is false.
 - (d) If the assertion and reason both are false.
 - (e) If assertion is false but reason is true.
1. Assertion : Dope test is used to estimate the level of blood alcohol by analyzing the breath of persons drinking alcohol.
Reason : A drunken person usually feels tense and less talkative. [AIIMS 2008]
 2. Assertion : Tobacco belongs to solanaceae.
Reason : Tobacco was called as Pipe of Piece.
 3. Assertion : Nicotine is an alkaloid found in tobacco.
Reason : It has several uses.
 4. Assertion : Sometimes nonsmokers are prone to lung cancer.
Reason : Nonsmokers are also called passive smokers.
 5. Assertion : Charas is a psychoactive drug.
Reason : Charas contains THC of 25 to 60%. [AIIMS 2009]
 6. Assertion : LSD is the most powerful psychedelic.
Reason : Psychedelic drugs cause hallucination.
 7. Assertion : Good athletes take Amphetamine.
Reason : Amphetamine brought increase activity and alertness.
 8. Assertion : Bacteria and other particles pass down the wind pipe and enter the lungs, causing damage to the tissue.
Reason : Smoking reduces ciliary effectiveness.
 9. Assertion : Caffeine is CNS stimulant.
Reason : Excessive use of caffeine adversely affects the brain.
 10. Assertion : Brown sugar is morphine derivative.
Reason : Morphine is the principal opium alkaloid.
 11. Assertion : Hypnotic drugs induce sleep.
Reason : Central nervous system is sensitive to hypnotic drugs.
 12. Assertion : Tranquillizers are called antipsychosis drug.
Reason : Tranquillizers are used to treat psychosis.
 13. Assertion : Champagnes are wines.
Reason : Champagnes are made in France.

14. Assertion : Pregnant ladies should not take alcohol.
Reason : Alcohol intake may result in foetal alcohol syndrome.
15. Assertion : Alcohol along with other stimulants or narcotic drugs is extremely harmful.
Reason : Alcohol damages only digestive system.
16. Assertion : Alcoholics may show deficiency symptoms of Wernicke's and Korsakoff's syndromes.
Reason : Alcohol acts as depressant.

Answers

Smoking

1	a	2	c	3	b	4	d	5	b
---	---	---	---	---	---	---	---	---	---

Alcoholism

1	b	2	d	3	c	4	d	5	c
---	---	---	---	---	---	---	---	---	---

Drug Addiction

1	b	2	a	3	a	4	c	5	c
6	c	7	e	8	d	9	c	10	a
11	d	12	c	13	c	14	b	15	b
16	b	17	a	18	b	19	d	20	c
21	c	22	a	23	c	24	c	25	d
26	e	27	d	28	c				

Mental health and Community health

1	c	2	d	3	d	4	c	5	b
6	d	7	b	8	c	9	c	10	b
11	c	12	d						

Critical Thinking Questions

1	b	2	c	3	a	4	c	5	d
6	a	7	b	8	a	9	d	10	c
11	a	12	a	13	a				

Assertion and Reason

1	d	2	b	3	a	4	b	5	a
6	a	7	e	8	a	9	c	10	b
11	a	12	a	13	b	14	a	15	c
16	b								

Answers and Solutions

Smoking

- (a) Because CO has higher affinity to combine with haemoglobin of blood than oxygen.
- (c) Polycyclic aromatic hydrocarbons are carcinogenic which cause cancer.
- (b) The use of tobacco originated in America. It was smoked by the red Indians.
- (d) Polycyclic hydrocarbons, nicotine, X-ray and U.V.-radiation are carcinogenic agent.
- (b) Benzpyrene is most carcinogenic present in tobacco smoke.

Drug Addiction

- (c) ECT is the abbreviation for electro convulsive therapy. Shock treatment (ECT) is suited in some cases and can bring about dramatic improvement in severe depression.
- (a) Heroin (diamorphine or diacetyl morphine) is a semisynthetic opiate narcotic which is three times more potent than morphine.
- (c) Hallucinogens can alter a person's thought, feeling and perceptions.
- (c) The products of hemp plant, cannabis sativa like Marijuana, Bhang, Ganja, Hashish, Charas etc.
- (b) Cyclosporine is used as immuno depressant, this drug is derived from a fungus and inhibit the activity of helper - T cells, thus help to prevent rejection of organ transplant.
- (b) Teratogenic substances are mainly responsible for abnormal development of the foetus.
- (b) Opium, morphine, heroin, pethidine and methadone are all opiate narcotics (drugs that suppress brain function and relieve intense pain).
- (a) Pathological impairment of memory is termed as amnesia.
- (d) Option (1) represents morphine which is obtained from *Papaver somniferum*. Morphine is used as Sedative and pain killer.
- (c) LSD drug detaches the brain from the present circumstances and connects with imaginary atmosphere thus causing imbalance.
- (c) The plant illustrated in diagram is Datura which has hallucinogenic properties.
- (a) Valium is the trademark for the preparation of diazepam.



Mental health and Community health

6. (d) Alzheimer's disease is caused by senile plaques and neuro-fibrillary tangles resulting in loss of choline acetyltransferase activity.
7. (b) In Neurosis patient shows excessive/prolonged reaction to given stress, e.g., anxiety neurosis, hysteria, obsessional neurosis, reactive depression.
11. (c) Social therapy of mental illness is required for rehabilitation of mentally ill persons.

Critical Thinking Questions

1. (b) Nicotine initially stimulates and subsequently in high doses inhibits neural impulses at autonomic ganglia and the neuromuscular junction.
4. (c) Use of alcohol, vision becomes blurred and unsteady often the field of vision is reduced called Tunnel vision.
6. (a) Amphetamines are synthetic drugs. Which are strong stimulants. These are taken by Truck drivers and night workers to keep awake.
8. (a) Valium is the trademark for the preparation of benzodiazepines.
10. (c) Tobacco smoke may break down the walls of alveoli of the lungs, decreasing the surface area for gas exchange. Causing emphysema.

Assertion and Reason

1. (d)
2. (b) Tobacco is obtained from the dried and cured leaves of young branches of *Nicotiana tabacum* and *Nicotiana glauca*. These plants belong to the family solanaceae. In early days tobacco was often called the pipe of piece as it reduces alertness and give feeling of tranquility.
3. (a) Tobacco contains an alkaloid, nicotine which can be used as a raw material for preparation of the antipellagra vitamin, nicotinic acid (niacin). Nicotin is also used in physiological and pharmacological investigation and as insecticide and a fumigant.
4. (b) Indoor atmospheres and other confined spaces are often contaminated by tobacco smoke which is inhaled involuntarily by both smokers and nonsmokers. It is called involuntary smoke inhalation or passive smoking. It is now recognized as a cause of lung cancer in nonsmokers.
5. (a) Charas is the dried resinuous extract from the flowering tops and leaves of *Cannabis sativa*. In some countries like America, charas is called hashish. Liquid hashish is called hash oil, which may contain a THC (Tetra hydrocannabinol) of 25 to 60 percent.
6. (a) Psychedelic drugs changes one's mood, behaviour, thoughts, feeling and perceptions, without any true sensory stimulus. They cause hallucinations [a sense perception (sight, touch, sound, smell or taste) that has no basis in external stimulation]. LSD causes horrible dreams, emotional outbursts, hallucination, chronic psychosis and severe damage to the central nervous system. It also brings about chromosomal and foetal abnormalities. An LSD addict can be easily recognised from incoherence in writing and drawing.

7. (e) Amphetamine is one of the drugs included in the 'dope test' for athletes. Amphetamines are found in the urine soon after ingestion. Since metabolism of amphetamines is slow, the drug is found in the urine for several subsequent days. If the drug is found in the urine test of athletes, they are debarred to participate. Amphetamines are synthetic activator of sympathetic nerves bringing about increased activity and alertness. They are used by some persons to work continuously for hours or to reduce weight. They reduce mental capability. The drugs are addictive.
8. (a) Cilia in the respiratory tract of humans sweep invading bacteria and particles up the trachea and away from the lungs. If ciliary effectiveness is reduced because of smoking, invading organisms or particles could pass down the windpipe and enter the lungs, causing damage to the delicate lung tissue that might result in disease.
9. (c) Caffeine is CNS (Central nervous system) stimulant. Its addictions is psychological. Higher doses of caffeine causes nervousness, restlessness, panic, insomnia (lack of sleep) and excitement. Excessive intake of caffeine also causes addiction and indigestion and disturbs renal functions.
10. (b) Morphine is a derivative of the opium. It is the principal opium alkaloid and a strong analgesic. Diacetyl morphine hydrochloride is brown sugar / smack and is more powerful analgesic than morphine.
11. (a) Hypnotic drug induces sleep. They are more or less general depressants of central nervous system. They are used as antianxiety drugs.
12. (a) Some tranquillizers are also called antipsychotic drugs (major tranquillizers) as they have good effect in all types of psychosis (patients having severe psychiatric illness, schizophrenic patients). They reduce aggressiveness. Thought and behaviour are gradually normalised and anxiety is relieved. Examples of antipsychotic drugs are Phenothiazines, Butyrophenones, Pimozide, Reserpine, etc.
13. (b) Champagnes are produced in vicinity of Reims and Epernay. Only wines made in this champagne region have a right to the name. Black and red grapes are used and the manufacture involves a series of elaborate processes which extend over a period of six or seven years.
14. (a) Heavy drinking in pregnancy results in the rapid placental transfer of both ethanol and acetaldehyde which may have serious consequences for foetal development. The foetal alcohol syndrome (FAS) includes facial changes, small teeth with faulty enamel, defects in atria and ventricles of heart, limitation in joint movement and mental retardation.
15. (c) Effect of alcohol is enhanced by taking some other substances, e.g., Tobacco, hashish, acids of badly prepared wines. Exhaustion or hunger also make alcohol more dangerous. The nervous system and digestive system are most markedly affected.
16. (b) Alcohol act as a depressant of nervous system and acts as sedative and reduces the efficiency of body organs by reducing blood supply. Deficiency of nutrients such as minerals, proteins and vitamins are found in alcoholics. Thiamine (B_1) deficiency causes Wernicke's and Korsakoff syndromes. Wernicke's syndrome is characterized by mental disturbance, paralysis of eye movements and ataxia of gait. Korsakoff's syndrome is characterized by confusion and severe impairment of memory.

Smoking, Alcoholism, Drug addiction,
Mental health and Community health

SET Self Evaluation Test

- Which one of the following statements is false
[Kerala PMT 2006]
 - Psychoactive drugs have the ability to alter the activity of the nervous system
 - Adolescence is marked by accelerated physical growth, development of reproductive organs and changes in functioning of the neuro endocrine system
 - Hallucinogen can alter a person's thoughts, feelings and perceptions
 - Mescaline is a stimulant
 - Depression is a mood disorder characterized by hopelessness, sadness, decline in interest, energy, concentration and changes in sleep pattern and appetite
- Community health service includes [JIPMER 1997]
 - School and health education
 - Hygienic environment
 - Control of communicable diseases
 - All the above
- Irrational fear of disease is [AIIMS 1997]
 - Algophobia
 - Mysophobia
 - Pathophobia
 - Haematophobia
- The organ which is most affected by alcohol, is [MP PMT 1994, 97]
 - Liver
 - Cerebrum
 - Cerebellum
 - Heart
- In the liver, alcohol is converted into a more toxic substance called [J & K CET 2010]
 - Acetaldehyde
 - Formaldehyde
 - Hydrogen cyanide
 - Methane
- Everytime, when the dosage of a drug has to be increased to achieve the same 'kick' that initially occurred in response to a smaller dose, this condition is known as [KCET 2010]
 - Rebound effect
 - Tolerance
 - Withdrawal symptoms
 - Addiction
- Head quarter of World Health Organisation (WHO) is located at
 - New York
 - Geneva
 - London
 - Paris
- Which one of the following is a matching pair of a drug and its category [AIIMS 2004, 08]
 - Amphetamines - Stimulant
 - Lysergic and Dimethyl amide - Narcotic
 - Heroin - Psychotropic
 - Benzodiazepam - Pain killer
- Cocaine interferes with which neurotransmitter transportation [MP PMT 2011]
 - Serotonin
 - Epinephrine
 - Dopamine
 - Acetylcholine

AS Answers and Solutions

1	d	2	d	3	c	4	a	5	a
6	b	7	b	8	a	9	c		

- (a) Liver is damaged by alcohol. The liver is the storehouse of glycogen but alcohol causes the storage of fat in the liver.
- (a) Amphetamines are synthetic drugs which are strong stimulants.

* * *

