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Signature & Date:

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Answer to the Question no : 01 (A)

In many industries these beliefs still exist, despite evidence to the contrary. More successful recent approaches to safe operation have followed a human factors or behavioral approach and a new set of safety principles have been defined.

As applied to the process industries these are:

- ① Safety should be like other managerial function.
- ② Certain types of activity are more likely to cause accidents:
  - ③ Unusual or non-routine activities
  - ④ Non-productive activities
  - ⑤ Construction and unscheduled maintenance activities.

iii) Safety personnel must take a pro-active approach by:

① Searching for the root causes of accident

② Establishing procedure to reduce the chance of accident or not to happen same type of accident again.

iv) In many cases, the changes highlighted above are part of normal human behavior.

v) There are three essential elements in an employee safety system:

① The physical (safety equipment, tools, machines, office etc)

② The managerial (safety regulations, training, incentive plan etc).

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- ⑩ The cultural (Safety practice at all level & for all)
- ⑪ (vi) There is no single way to achieve Safety in an organization but the following aspects are all essential for achieving Safety:-
  - ⑫ Involve supervisions and make them accountable.
  - ⑫ Involve management at all levels.
  - ⑫ Senior management must demonstrate commitment
  - ⑫ Be flexible
  - ⑫ Be perceived as positive.

③

## Answer to the Question no 1(B)

Summarizing the activities of safety management in short:

- (a) Safe equipment, process and layout design
- (b) Safe work method design
- (c) Recruiting and retaining of competent employee
- (d) Promotion of Safety awareness from an individual and organizational standpoint.
- (e) Educational in safety at all levels in the organization and,
- (f) Managerial and financial support for the normal and ethical responsibilities.

## a. Safe Equipment and Process Design:

Prevention is better than cure - is an old saying and is widely used. Many and most of the accidents now a days happen due to equipment or process failure.

Project management team to ensure of the plant, people and the environment and these are,

- ① Plant layout, design perspective
- ② Piping and instrumentation diagram
- ③ Equipment and material specifications
- ④ Process chemistry
- ⑤ Maintenance system scope, safety & fine protection

## b. Safe work method Design

Various type of works are executed by an individual or by a group of people for plant ~~organis~~ operation & maintenance also at the time of plant/equipment installation. The style and standard of work might be different and may not match with the equipment or environmental requirement, which may result in accident. Different permits of works, entry etc are shown.

⑥ "All the technologies of the world <sup>will</sup> be useless if we do not follow the norms?"

c. Recruiting and retaining of competent employees:

Experienced manpower is the main assets of a business. Productivity and safety of any process in business greatly depend on the capacity and capability of the people engaged in business.

d. Promotion of safety awareness from an individual and organizational stand point

(7) Safety awareness place a vital role in accident prevention program of organization. Organization have a strong management

Commitment to safety." People never plan to fail but usually fail to plan.

Safety committee comprising of people from safety department, specialist and workers representative may be formed.

e. Education in safety at all level in the organization

"People will make mistake as they are not proper to be infallible." On the other hand "Hazard analysis recognized that all the hazards can not be eliminated totally." So, it is obvious that there is a chance of people for making a mistake and hazards exist in the plant

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⑦

f. Managerial and financial support for the moral and ethical responsibilities.

The basic causes of accident are poor management policies and decisions, in addition to personal and environmental factors. To establish a good safety management program it is needed to have a well-designed plant, proper equipment, training, placement of manpower, equipment & material purchase, Police, safety awareness and high moral of employee's etc

⑨

### Answer to the question no: 3

#### Contract law:

An agreement which is enforceable by law.

An agreement is a settlement between two parties which contains obligations or promises which both parties need to fulfil. When such an agreement is made binding by law, it becomes a contract. The basic elements required for the agreement to be a legally enforceable contract are: mutual assent, expressed by a valid offer and acceptance, adequate consideration.

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Capacity and legality.

⑪

Briefly describe the rules of valid Contract according to Contract act 1872.

#### 1. Proposal or Offer:

Each Contract requires an offer and acceptance of that offer. Proposal or offer is the starting point to start to form an agreement. And this agreement may get the shape of a legally binding Contract, if it acquires its enforceability in law.

If the above mentioned definition is analyzed, the following elements of a proposal are found:

- (i) Signification of one's willingness
- (ii) Willingness is expressed to another person.

- iii) The willingness may be affirmative or negative
- iv) It has a definite object with the intention to create legal relation.

## 2. Rules of a proposal:

- i) The proposer must intent to create legal relations: The proposal must be one which is capable of creating a legal relation. If there is no intention to create legal relation rather the offer prevail merely on intention to create social relation.
- ii) mere expression of intention is not sufficient: Mere intentions are not sufficient to constitute an offer.
- iii)

Advertisements, price quotations of price, Catalogue, even though the Person to whom such intention is expressed act accordingly there will be no offer.

- iii) Offer may be made to definite person or some definite person or some definite class of person onto the world at large is called a general offer
- iv) The proposal must be definite one
- v) Proposal may be expressed or implied
- vi) The offer must be definite certain and unambiguous.
- vii) Offer must be communicated to the offeree

(viii) An offer may be conditional

### 3. Communication of offers:

Communication of the offer, as also of the acceptance, is an essential elements in a contract. Two persons may have a common intention but without communication there is no agreement.

### 4. Revocation of offers:

Revocation means cancellation. Revocation of an offer means its withdrawal by the offeror.

An offer may be revoked at any time before the offeree accepts it.

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## b. Modes of revocation:

Section 6 describes revocation of offer. An offer may be revoked in the following ways:

- ① By communication of notice
- ② By lapse of time
- ③ After expiring of a reasonable time
- ④ By non-fulfillment of conditions
- ⑤ By death or ~~insantil~~ insanity of offeror
- ⑥ By counter-offer
- ⑦ By refusal
- ⑧ By failure to accept in the mode prescribed



## 6. Acceptance: Acceptance of a proposal

means unconditional agreement to all the terms of that proposal. Acceptance typically can come in one of three type.

- (i) Express
- (ii) Implied
- (iii) Conditional

## 6.1 Rules of a valid acceptance:

- (i) Acceptance must be absolute and unqualified
- (ii) The acceptance must be unconditional
- (iii) Acceptance might be conditional.
- (iv) mere inquiries do not count as rejection
- (v) The acceptance must be expressed in some usual and reasonable manner

- vi) A Counter offer may become a terms of the agreement if it is accepted.
- vii) The acceptance must be communicated to the offeree.
- viii) Silence can never amount to an acceptance.
- ix) the Postal rule
- x) Modern methods of communication
- xi) The mode of acceptance
- xii) Time of acceptance
- xiii) Before offer
- 14) xiv) the acceptance must be made when the offer is in force

7. Counter offer: Counter offer is an offer made in response to a previous offer by the other party during negotiations for a final contract. For example, A sends B an offer and B amends it slightly and then send it back signed but amended.

8. Revocation of acceptance: Before the acceptance reaches the offeror, the acceptor can revoke the acceptance and thus prevent the contract. Thus A makes a proposal to B. B sends his acceptance by post. The communication of the acceptance is complete as against A when the letter is posted.

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9. Agreement: According to Section 2(e) of the Contract Act, 1872, every promise and every set of promises, forming the consideration for each other, is an agreement. It is also said that in the act that as agreement enforceable by law is a contract.

10. Free Consent: If A accepts the offer of B to sell a horse which he warrants as sound, when as a matter of fact it is not, there was, therefore, no real agreement between A and B. Hence it is essential that every agreement must be a true expression of the intention of the parties.

(19)

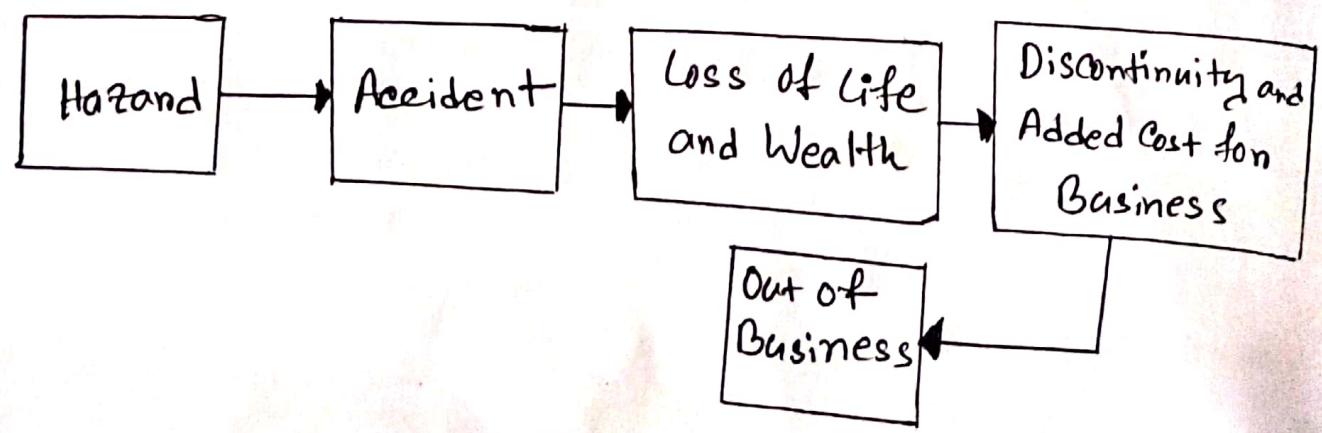
(10)

### Answer to the question no: 4-(a)

Hazard: Hazard is a chance of being harmed or injured or to expose to harm or danger". Or may be defined as "Hazard includes conditions that can results in deaths, injuries, illness, property loss & environmental damage.

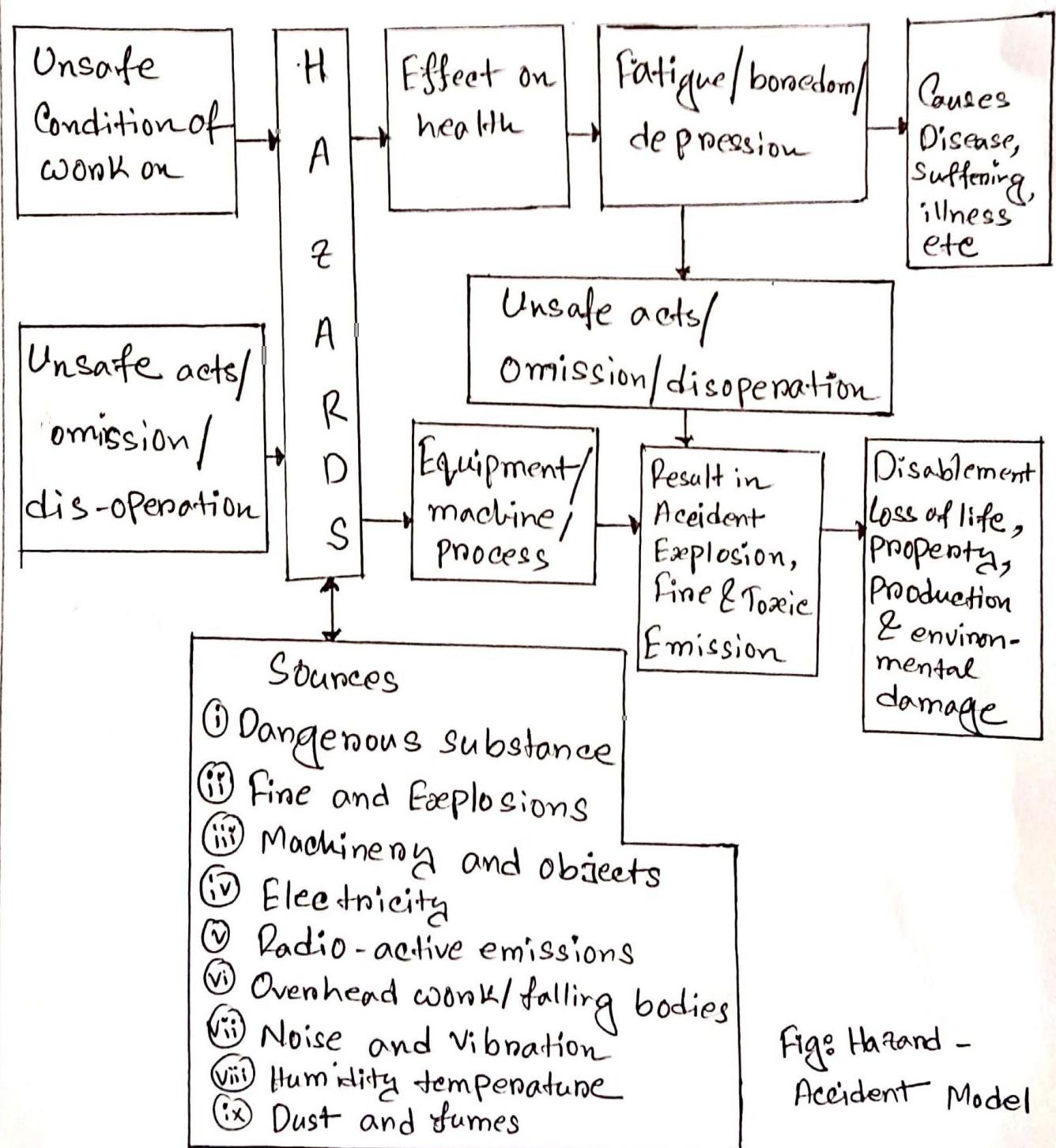
A more comprehensive definition may be as "A hazard is any real potential condition or act that could cause damage to property or harm to environment or may disrupt a process operation or commence injury death/prolong sickness to person but has not yet done so."

Model of Hazard - Business Relationship:



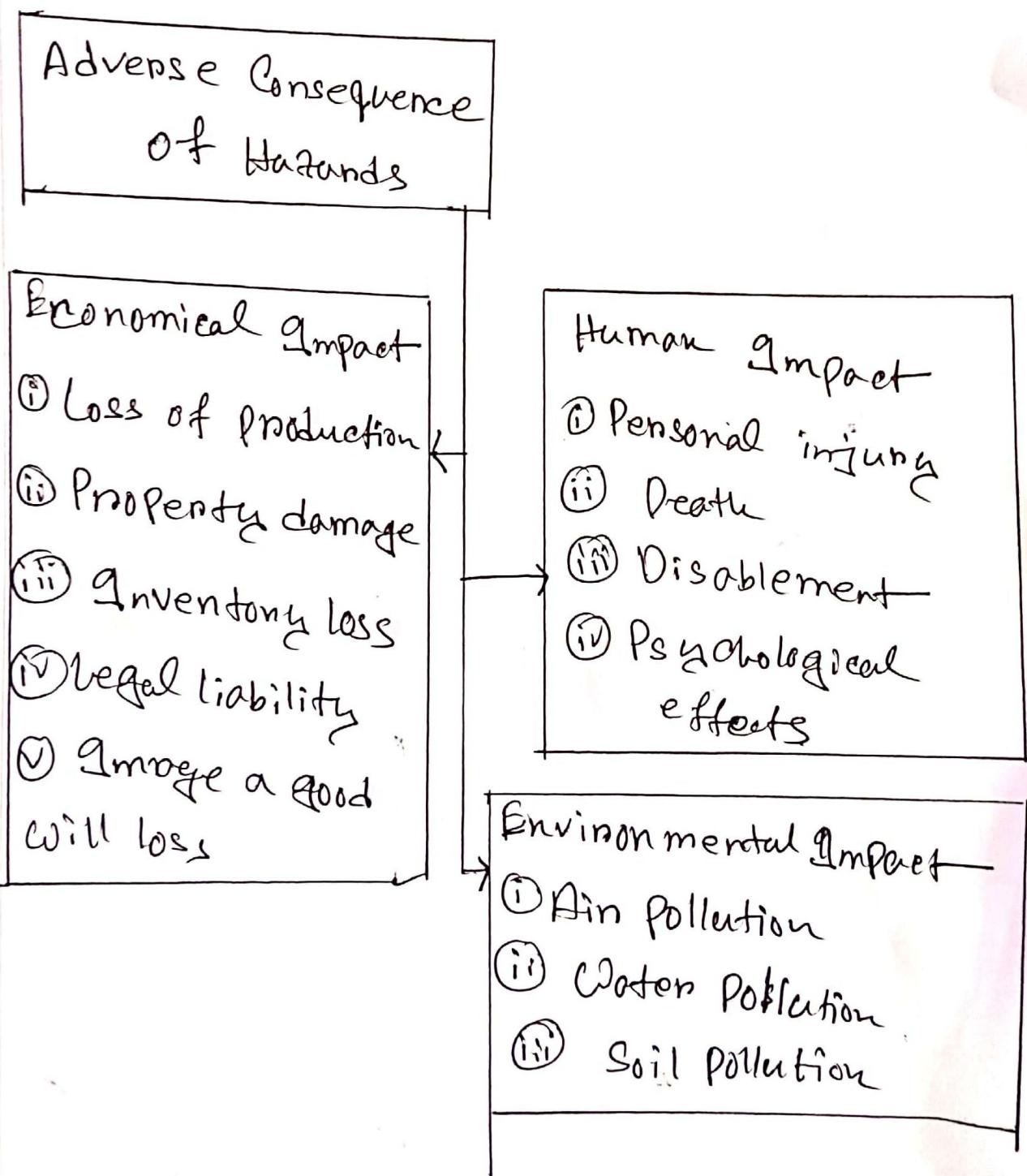
## Hazard Accident Model

An Accident - hazard model is shown below diagrammatically



## Answer to the question no: 41 (B)

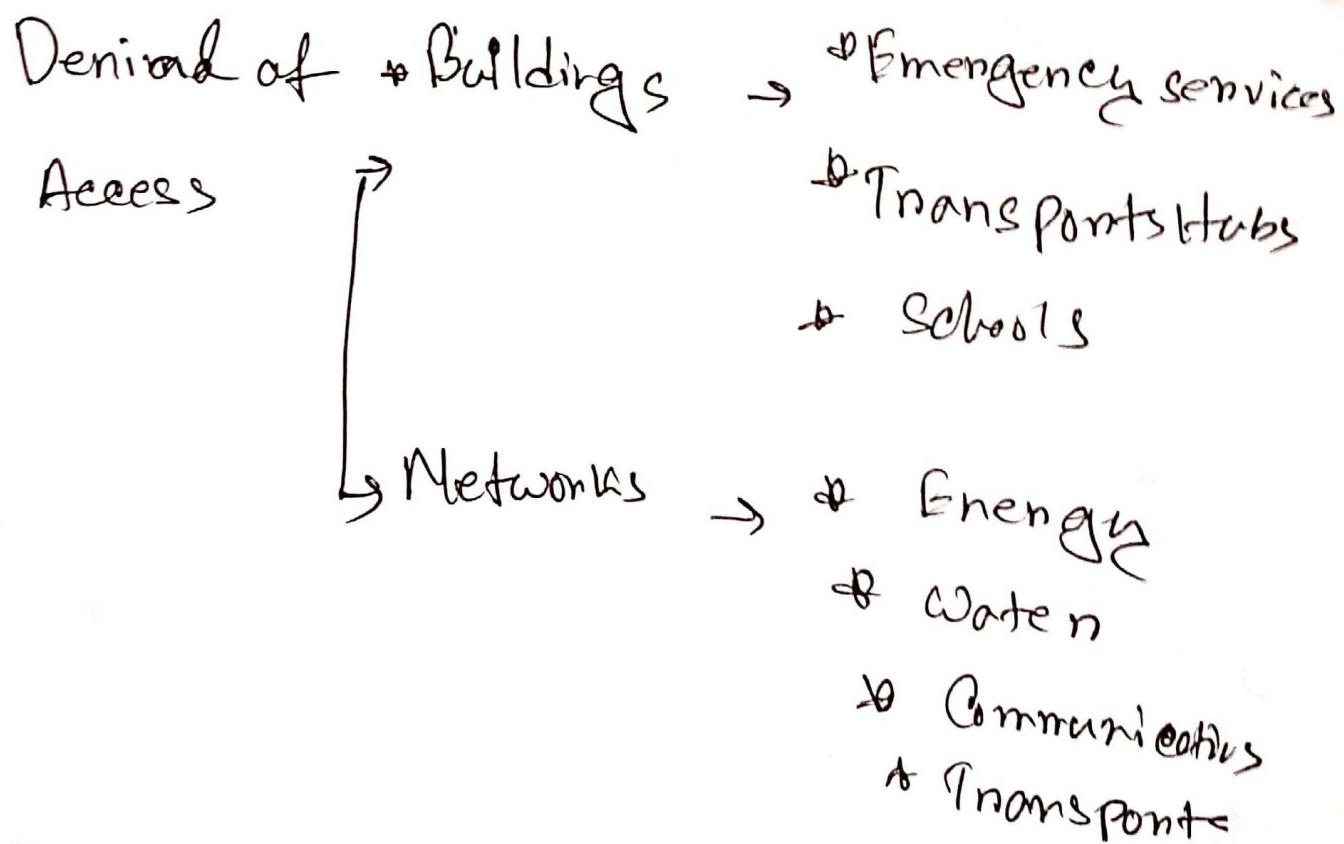
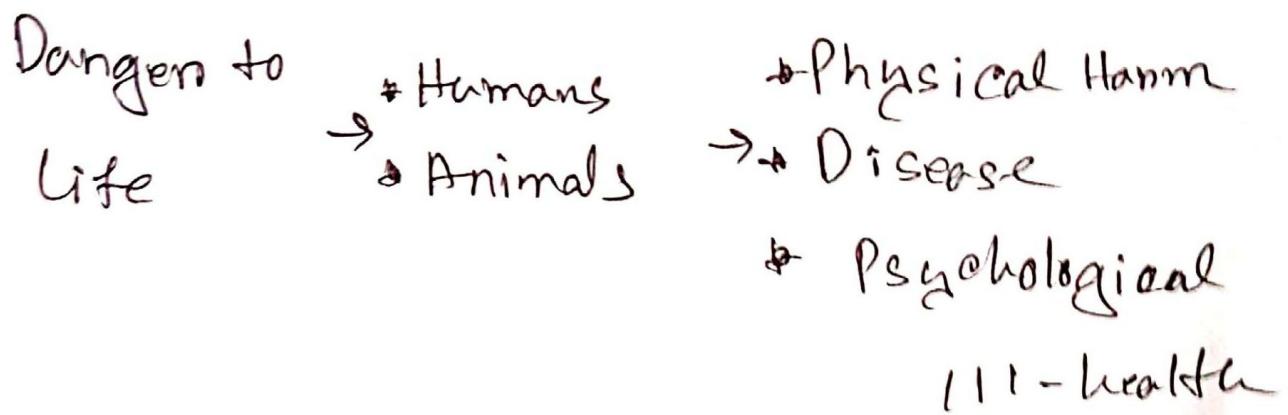
Interpret the adverse consequences of hazard in my life.



A common definition of adverse consequence

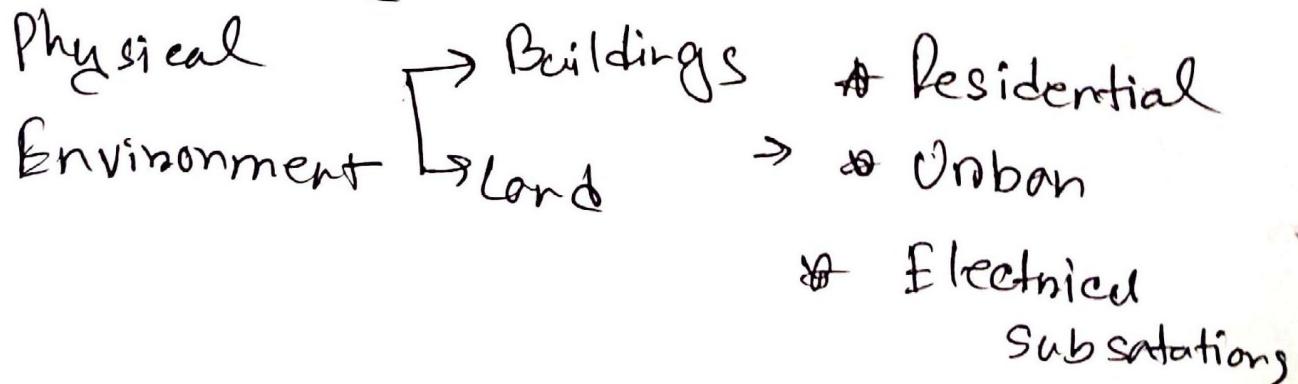
of health effect is,

- i) body injury
- ii) disease
- iii) Change in the way do body functions
- iv) effects on a developing fetus
- v) effect on a developing in life span
- vi) effects on children, grandchildren etc.



Damage of the

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## Answer to the question no: 5 (A)

PPE: Personal Protective Equipment (PPE) are vital safety gears to work hazardous work situation. The gears not only protect in employees health from accidents but their careful uses also ensure employees health at the working place.

Discuss the importance of using personal protective equipment (PPE) in the hazardous working condition like COVID-19

⑤ PPE protects its users against any physical harm or hazards that the workplace environment may present.

Here some reasons why it's important to use PPE in the workplace.

1. It keeps you from being liable for your own injuries:

One common speed bump that workers compensation attorneys deal with on the regular is an individual's decision not to wear PPE, regardless of the fact that they were provided with it by their employer. That often makes the liability for a work place illness or injury more of a gray area.

②6

It varies from case to case, but faithfully using all PPE that you are provided with

On the job is the best way to ensure that should an injury or illness directly result.

2. Long-term conditions may result from a failure to protect yourself.

Feeling fine at the end of your shift doesn't mean for fact you've protected your body. Exposure to different chemicals and compounds on the job can have long-term effects on your body.

Many of these daily mesothelioma cases were caused at a time before we knew so much about this disease. Workers should take advantage of the medical

Acknowledge regarding risk factors that we have today, and use PPE to safeguard their health and well-being.

B. You only have one pair of eyes

Safety glasses are probably one of the most common forms of PPE. This is because any substance whether corrosive or not, any material, sharp or not, can be hazardous when it comes in contact with your eyes.

Since 61% of eye injuries happen in manufacturing, construction or trade jobs, it is important to acknowledge that there are different types of

PPB equipment available for different situations.

Don't be afraid to inquire about upgrading your equipment.

4. It increases the quality of your working:

Think of PPB as a support system of sorts for the work your job requires you to do. It may be more physically demanding or slightly more hazardous than your average desk job, but the equipment is provided to make you feel that physical risk is minimal.

② All workers should feel confident to question the effectiveness of provided

PPB and feel educated on the standards that need to be met by equipment. Organizations like OSHA and the Center for Disease Control and Prevention seek to support American workers and reduce hazardous situation on the job.

## Answer to the question no - 5 (B)

Briefly explain the distinction between Private and Public Company.

### 1. Paid up capital

A Private Company must have a minimum Paid up Capital of Rs 100000 whereas a Public Limited Company must have a minimum Paid up Capital Rs. 600000 as per amendment act.

### 2 Number of members

The number of members in a Private

Company cannot be less than two and cannot be more than fifty

In a public company, the numbers cannot be less than seven but no maximum has been fixed.

#### 3. Restrictions on invitation on Public

A private company cannot invite the public to purchase its shares or debentures. A public company may do so.

#### 4. Restriction on name

A private company must add the words, "Private Limited", at the end of its name.

#### 5. Prospectus

32 A private company need not file a prospectus or statement in lieu of prospectus.

## 6. Commencement of business

A Private Company can commence business immediately on incorporation, whereas a Public Company has to wait until it obtains a certificate for the commencement of business.

## 7. Statutory meeting and statutory report

A Private Company need not hold the statutory meeting on file the statutory report.

## 8. Managerial remuneration

In the case of public companies there are certain limits to managerial remuneration such as, 11 percent of the net profit.

### 9. Number of directors

The Act provides that a private Company must have at least 2 directors and public Company at least 3 or directors.

### 10. Rules regarding directors

The rules regarding directors are less stringent in the case of private companies which are not subsidiaries of public companies.

### 11. Company's own share

In a private company any person can get financial assistance for purchasing the company's own share.

### 12. Procedure of meeting

The law relating to the procedure of meeting is relaxed in a private company.

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## Answer to the Question no: 7

The various measures for the prevention of occupational disease may be grouped under three heads:

- a. Medical
- b. Engineering &
- c. Statutory or legislative

### a. Medical measures

#### (i) Pre-placement examination:

Pre-placement examination of employees is the foundation of an efficient occupational health service. Employee's family, past occupational & social history, a thorough physical examination, includes pathological & radiological test, electrocardiogram, vision test, etc. Should be thoroughly examined and recorded in his personal file. Pre-placement examination also

(35) served as a useful bench-mark for future comparison for health deterioration.

(ii) Periodic examination:

Periodic examination helps in determining the disease at the early stage and scopes for easy remedy. The frequency and content of periodical medical examinations will depend upon the type of occupational exposure. Ordinarily periodic examination helps in determining the disease at the early stage.

Only Ordinarily workers are examined once in a year.

(iii) Medical & health care service:

The medical care of occupational diseases is a basic function of an occupational health service. First aid services should be provided within the factory. Immunization is another accepted function of an occupational health service. Company should arrange insurance scheme to support health care of the employees.

#### (iv) Notification:

The main purpose of notification of health related national laws or regulations is to initiate measures for prevention and protection against occupational disease. This also helps in effective application of the laws and helps to investigate the working conditions and other circumstance, which have cause or suspected to have cause occupational diseases.

#### (v) Supervision of working environment:

Periodic inspection of working environment provides information of primary importance in the prevention of occupational disabilities. The physician should visit frequently the working place to check & monitor work environment - light, noise, temperature, sanitation, space etc and various aspects of occupational physiology such as occurrence of fatigue, night-work, shift-work, weight gain etc.

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(vi) Maintenance and analysis of records:

Past record provides guideline for decision making & planning. The employee's health records and occupational disability record must be maintained. It will be better to collect health record of employees who have retired or left the services, especially for the critical works. This enables to assess the hazards which have long term effect.

(vii) Health education & Counseling:

Usually, health education should be start before the employee starts his assignment. All the risks at the working place and protective measures for them should be explained to him. He should be frequently remained about the dangers in the working place through the media of health education such as charts, handbills, poster and organization magazine.

### b. Engineering measures

#### i) Plan layout & design:

Layout plan and proper design of civil structures, machine, equipment, tools etc. are one of the main factor of safety and Occupational health. Proper space, ventilation, floor condition, lighting, aeration, machine guarding, cleanliness, use of safety gears etc. contribute to congenial working place.

#### ii) Good house keeping:

Clean and good work environment not only good health but also freshes mind. Equipment, tools and other materials should be kept systematically and orderly, so that less time & effort are required to use it.

#### iii) General ventilation:

There should be good ventilation space in the working place. There is a rule that for

each worker, there should be a minimum 3 sq.ft of ventilation opening through which air can pass continuously and must have 500 c.ft of air space for each worker.

(iv) Local exhaust ventilation

Local exhaust must be provided for the ventilation of dusts, fumes and other injury substance produced with a particular job. These harmful matters must be trapped by enclosure & extracted at source before they contaminate the general working place. Dusts can also be controlled at the point of origin by water spray.

(v) Mechanization and Substitution

There plant should be mechanized to the fullest possible extent to reduce hazard of contact with harmful substances. Substitution means the replacement of a harmful material by a harmless one or one of lesser toxicity.

(vi) Isolation:

Critical and offensive operations may be separated/ isolated in a buildings so that employees/workers non directly connected with it. Certain operations can be done at night/holidays in the ~~abs~~ absence of the usual staff.

(vii) Protective device:

Protective gears must be provided to the employees who work in hazardous working environment.

(viii) Statistical monitoring & research:

Statistical monitoring Comprises the review at regular intervals of collected data on the health and environmental exposure of occupational groups. This monitoring provides individual health care of an employee; it provides monitoring of rate of increase of dose levels of victims.

Research provides condition of the work environment and different disease control program.