

**BHARTIYA SKILL DEVELOPMENT UNIVERSITY**

School of Computing Skills

3rd Semester / Makeup Examinations  
B. Voc. Program, Summer Semester (2021)**MAI 1301 Artificial Intelligence with Python****Time: 3 Hours****Max. Marks: 100****Section – A****20X01 = 20 Marks**

1. A.M. Turing developed a technique for determining whether a computer could or could not demonstrate the artificial Intelligence, Presently, this technique is called:
  - a) Turing Test
  - b) Algorithm
  - c) Boolean Algebra
  - d) Logarithm
2. Which instruments are used for perceiving and acting upon the environment?
  - a) Sensors and Actuators
  - b) Sensors
  - c) Perceiver
  - d) None of the mentioned
3. How many types of agents are there in artificial intelligence?
  - a) 1
  - b) 2
  - c) 3
  - d) 4
4. Which is used to improve the agents performance?
  - a) Perceiving
  - b) Learning
  - c) Observing
  - d) None of the mentioned
5. What is the form of Fuzzy logic?
  - a) Two-valued logic
  - b) Crisp set logic
  - c) Many-valued logic
  - d) Binary set logic
6. Fuzzy Set theory defines fuzzy operators. Choose the fuzzy operators from the following.
  - a) AND
  - b) OR

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- c) NOT  
d) All of the mentioned
7. Which of the following is an advantage of using an expert system development tool?  
a) imposed structure  
b) knowledge engineering assistance  
c) rapid prototyping  
d) all of the mentioned
8. The room temperature is hot. Here the hot (use of linguistic variable is used) can be represented by \_\_\_\_\_  
a) Fuzzy Set  
b) Crisp Set  
c) Fuzzy & Crisp Set  
d) None of the mentioned
9. Which of the following contains the output segments of Artificial Intelligence programming?  
a) Printed language and synthesized speech  
b) Manipulation of physical object  
c) Locomotion  
d) All of the mentioned
10. Which search method takes less memory?  
a) Depth-First Search  
b) Breadth-First search  
c) Optimal search  
d) Linear Search
11. The general structure of Artificial Neural network has the following layers:  
a) Input Layer  
b) Output Layer  
c) Hidden Layer  
d) All of the Above
12. A function that transforms the values or states the conditions for the decision of the output neuron is known as an?  
a) Activation Function  
b) Activated Function  
c) Neural Function  
d) None of the above
13. Backpropogation refers to:  
a) Method for training a neural network  
b) Methods for optimization of weights in neural network  
c) Method for propogation of errors in the backward direction in neural network



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- d) All of the above
14. Which one of the following is not a type of Activation Function?
- Relu Function
  - Sigmoid Funcontion
  - Step Function
  - Neural Function
15. Depth First Search (DFS) is a type of::
- Informed Search Method
  - Uninformed Search Method
  - Heuristic Search Method
  - None of the above
16. Heuristic Search is also known as:
- Informed Search Method
  - Uninformed Search Method
  - Depth First Search Method
  - None of the above
17. Which one of the following does not represent an Informed Search Method?
- Hill Climbing
  - Best- first Search
  - Constraint Satisfaction
  - Depth-first Search
18. Which of the following is a variant of Generate and Test in which feedback from the test procedure is used to help the generator decide which direction to move in the search space.
- Hill Climbing
  - Best- first Search
  - Constraint Satisfaction
  - Depth-first Search
19. Which of the following methods combines the advantages Depth-First search along with one other search techniques.
- Hill Climbing
  - Best- first Search
  - Depth-first Search
  - Constraint Satisfaction

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20. An Agent interacts with the environment in which of the following ways?
- Learning and Action
  - Perception and Action
  - Simulation and Learning
  - None of the Above

**Section – B**  
**(Attempt any 06 questions out of 08 questions)**

**06x05=30 Marks**

1. Explain Depth-First Search and what is the disadvantage of it?
2. Differentiate between Speech and Voice Recognition.
3. What is Agent? Explain.
4. What are CNN and RNN? Explain
5. What is Environment? Explain.
6. What is Fuzzy Logic? Explain.
7. Define Expert Systems.
8. Define Artificial Neural Networks (ANNs).

**Section – C**

**05X10 = 50 Marks**

1. Explain two Types of Artificial Neural Networks in detail.
2. Explain with the help of neat diagrams structure of all the four Intelligent Agents.
3. Discuss Fuzzy Logic Systems Architecture and membership functions in detail.
4. Discuss Characteristics, Capabilities and Components of Expert Systems.
5. Implement ANN using Python.

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School of Computing Skills

3rd Semester / Makeup Examinations  
B. Voc. Program, Summer Semester (2021)*Answer key*

MAI 1301 Artificial Intelligence with Python

Time: 2 Hours

Instruction: Answer all questions

Max. Marks: 50

**Section – A****10X01 = 10 Marks**

1. A.M. Turing developed a technique for determining whether a computer could or could not demonstrate the artificial Intelligence, Presently, this technique is called \_\_\_\_

- a) Turing Test
- b) Algorithm
- c) Boolean Algebra
- d) Logarithm

Ans: a)

2. Which instruments are used for perceiving and acting upon the environment?

- a) Sensors and Actuators
- b) Sensors
- c) Perceiver
- d) None of the mentioned

Ans: a)

3. How many types of agents are there in artificial intelligence?

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

Ans: d)

4. Which is used to improve the agents performance?

- a) Perceiving
- b) Learning
- c) Observing
- d) None of the mentioned

Ans: b)

5. What is the form of Fuzzy logic?

- a) Two-valued logic
- b) Crisp set logic
- c) Many-valued logic
- d) Binary set logic

Ans: c)

6. Fuzzy Set theory defines fuzzy operators. Choose the fuzzy operators from the following.

- a) AND
- b) OR
- c) NOT
- d) All of the mentioned

Ans: d)

7. Which of the following is an advantage of using an expert system development tool?

- a) imposed structure

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- b) knowledge engineering assistance
- c) rapid prototyping
- d) all of the mentioned

Ans: d)

8. The room temperature is hot. Here the hot (use of linguistic variable is used) can be represented by \_\_\_\_\_

- a) Fuzzy Set
- b) Crisp Set
- c) Fuzzy & Crisp Set
- d) None of the mentioned

Ans: a)

9. Which of the following contains the output segments of Artificial Intelligence programming?

- a) Printed language and synthesized speech
- b) Manipulation of physical object
- c) Locomotion
- d) All of the mentioned

Ans: d)

10. Which search method takes less memory?

- a) Depth-First Search
- b) Breadth-First search
- c) Optimal search
- d) Linear Search

Ans: a)

11. d

12. a

13. d

14. d

15. b

16. a

17. d

18. a

19. b

20. b

## Section – B

04x04=16 Marks

1. Explain Depth-First Search and what is the disadvantage of it?

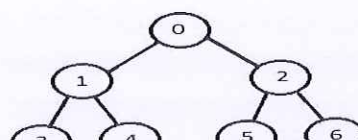
Ans: It starts from the root node, explores the neighboring nodes first and moves towards the next level neighbors. It generates one tree at a time until the solution is found. It can be implemented using FIFO queue data structure. This method provides shortest path to the solution.

If branching factor (average number of child nodes for a given node) =  $b$  and depth =  $d$ , then number of nodes at level  $d = bd$ .

The total no of nodes created in worst case is  $b + b^2 + b^3 + \dots + b^d$ .

Disadvantage – Since each level of nodes is saved for creating next one, it consumes a lot of memory space. Space requirement to store nodes is exponential.

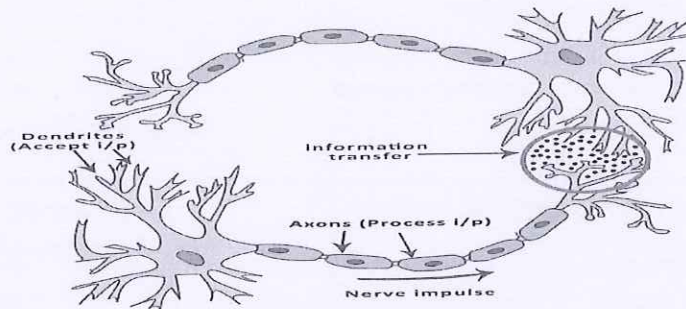
Its complexity depends on the number of nodes. It can check duplicate nodes.



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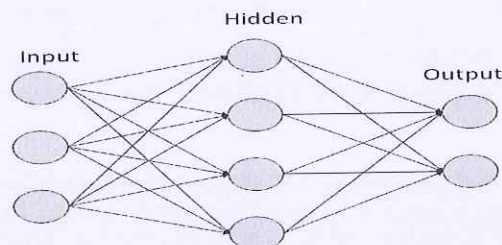
The idea of ANNs is based on the belief that working of human brain by making the right connections, can be imitated using silicon and wires as living neurons and dendrites.

The human brain is composed of 86 billion nerve cells called neurons. They are connected to other thousand cells by Axons. Stimuli from external environment or inputs from sensory organs are accepted by dendrites. These inputs create electric impulses, which quickly travel through the neural network. A neuron can then send the message to other neuron to handle the issue or does not send it forward.



ANNs are composed of multiple nodes, which imitate biological neurons of human brain. The neurons are connected by links and they interact with each other. The nodes can take input data and perform simple operations on the data. The result of these operations is passed to other neurons. The output at each node is called its activation or node value.

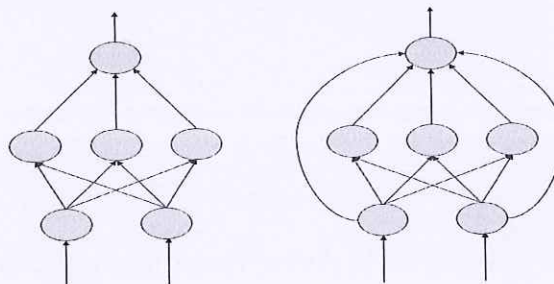
Each link is associated with weight. ANNs are capable of learning, which takes place by altering weight values. The following illustration shows a simple ANN -



There are two Artificial Neural Network topologies - Feed Forward and Feedback.

### Feed Forward ANN

In this ANN, the information flow is unidirectional. A unit sends information to other unit from which it does not receive any information. There are no feedback loops. They are used in pattern generation/recognition/classification. They have fixed inputs and outputs.



### Feed Back ANN

Here, feedback loops are allowed. They are used in content addressable memories.

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2. Differentiate between Speech and Voice Recognition.

Ans: These both terms are common in robotics, expert systems and natural language processing. Though these terms are used interchangeably, their objectives are different.

Speech Recognition	Voice Recognition
The speech recognition aims at understanding and comprehending <b>WHAT</b> was spoken.	The objective of voice recognition is to recognize <b>WHO</b> is speaking.
It is used in hand-free computing, map, or menu navigation.	It is used to identify a person by analysing its tone, voice pitch, and accent, etc.
Machine does not need training for Speech Recognition as it is not speaker dependent.	This recognition system needs training as it is person oriented.
Speaker independent Speech Recognition systems are difficult to develop.	Speaker dependent Speech Recognition systems are comparatively easy to develop.

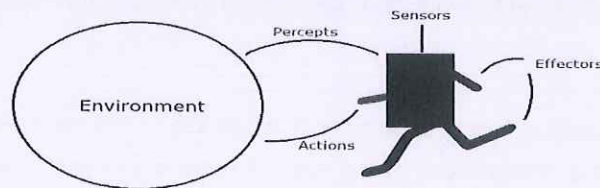
3. What is Agent?

Ans: An agent is anything that can perceive its environment through sensors and acts upon that environment through effectors.

A human agent has sensory organs such as eyes, ears, nose, tongue and skin parallel to the sensors, and other organs such as hands, legs, mouth, for effectors.

A robotic agent replaces cameras and infrared range finders for the sensors, and various motors and actuators for effectors.

A software agent has encoded bit strings as its programs and actions.



### Section – C

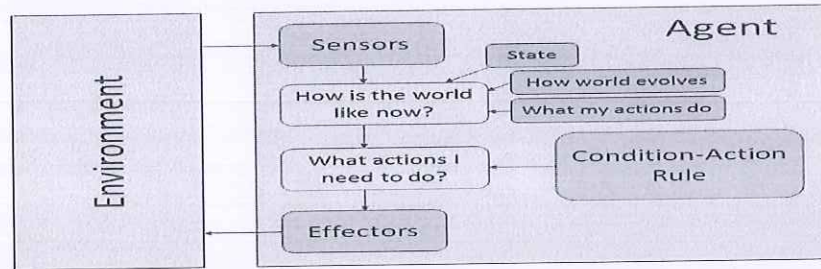
04X06 = 24 Marks

1. What are Artificial Neural Networks (ANNs)? Explain two Types of Artificial Neural Networks.

Ans: A neural network can be defined as a computing system made up of a number of simple, highly interconnected processing elements, which process information by their dynamic state response to external inputs.

#### Basic Structure of ANNs

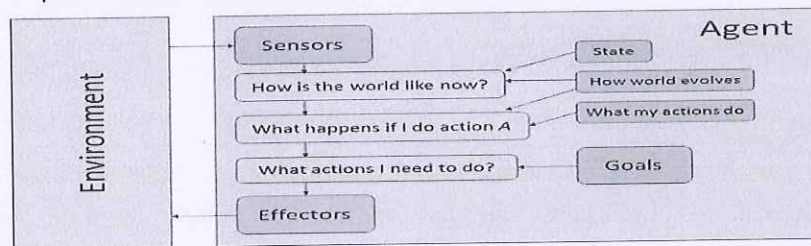
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### Goal Based Agents

They choose their actions in order to achieve goals. Goal-based approach is more flexible than reflex agent since the knowledge supporting a decision is explicitly modeled, thereby allowing for modifications.

Goal – It is the description of desirable situations.

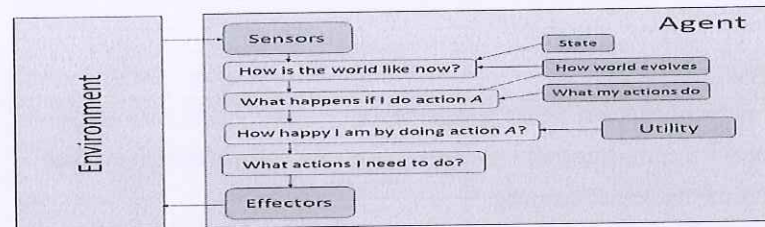


### Utility Based Agents

They choose actions based on a preference (utility) for each state.

Goals are inadequate when –

- There are conflicting goals, out of which only few can be achieved.
- Goals have some uncertainty of being achieved and you need to weigh likelihood of success against the importance of a goal.



3. Discuss Fuzzy Logic Systems Architecture and membership functions in detail.

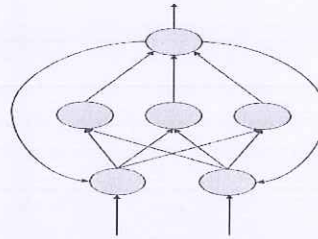
Ans: It has four main parts as shown –

- Fuzzification Module – It transforms the system inputs, which are crisp numbers, into fuzzy sets. It splits the input signal into five steps such as –

- LP     x is Large Positive
- MP     x is Medium Positive
- S       x is Small
- MN     x is Medium Negative
- LN     x is Large Negative

- Knowledge Base – It stores IF-THEN rules provided by experts.
- Inference Engine – It simulates the human reasoning process by making fuzzy inference on the inputs and IF-THEN rules.
- Defuzzification Module – It transforms the fuzzy set obtained by the inference engine into a crisp value.

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### Working of ANNs

In the topology diagrams shown, each arrow represents a connection between two neurons and indicates the pathway for the flow of information. Each connection has a weight, an integer number that controls the signal between the two neurons.

If the network generates a "good or desired" output, there is no need to adjust the weights. However, if the network generates a "poor or undesired" output or an error, then the system alters the weights in order to improve subsequent results.

### Back Propagation Algorithm

It is the training or learning algorithm. It learns by example. If you submit to the algorithm the example of what you want the network to do, it changes the network's weights so that it can produce desired output for a particular input on finishing the training.

**Back Propagation networks are ideal for simple Pattern Recognition and Mapping Tasks.**

2. Explain with the help of neat diagrams structure of all the four Intelligent Agents.

Ans: Agent's structure can be viewed as –

Agent = Architecture + Agent Program

Architecture = the machinery that an agent executes on.

Agent Program = an implementation of an agent function.

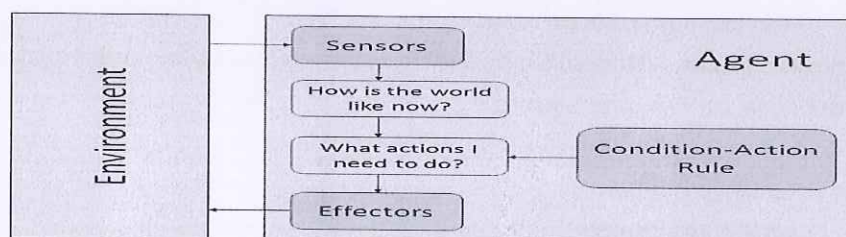
### Simple Reflex Agents

They choose actions only based on the current percept.

They are rational only if a correct decision is made only on the basis of current percept.

Their environment is completely observable.

Condition-Action Rule – It is a rule that maps a state (condition) to an action.



### Model Based Reflex Agents

They use a model of the world to choose their actions. They maintain an internal state.

Model – knowledge about "how the things happen in the world".

Internal State – It is a representation of unobserved aspects of current state depending on percept history.

Updating the state requires the information about –

- How the world evolves.
- How the agent's actions affect the world.

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- Interpreting input
  - Predicting results
  - Justifying the conclusion
  - Suggesting alternative options to a problem
- They are incapable of –
- Substituting human decision makers
  - Possessing human capabilities
  - Producing accurate output for inadequate knowledge base
  - Refining their own knowledge

Components of Expert Systems

The components of ES include –

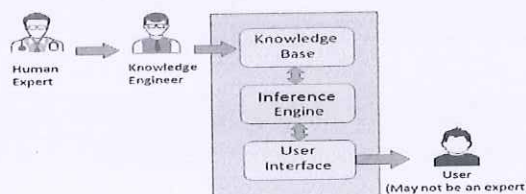
- Knowledge Base
- Inference Engine
- User Interface

Let us see them one by one briefly –

### Knowledge Base

It contains domain-specific and high-quality knowledge.

Knowledge is required to exhibit intelligence. The success of any ES majorly depends upon the collection of highly accurate and precise knowledge.



### What is Knowledge?

The data is collection of facts. The information is organized as data and facts about the task domain. Data, information, and past experience combined together are termed as knowledge.

### Components of Knowledge Base

The knowledge base of an ES is a store of both, factual and heuristic knowledge.

- Factual Knowledge – It is the information widely accepted by the Knowledge Engineers and scholars in the task domain.
- Heuristic Knowledge – It is about practice, accurate judgement, one's ability of evaluation, and guessing.

### Knowledge representation

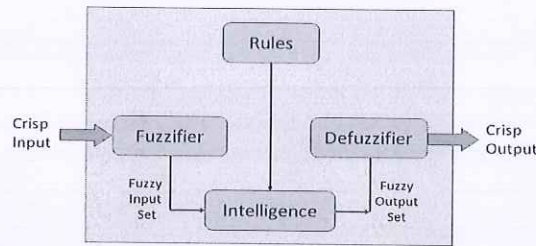
It is the method used to organize and formalize the knowledge in the knowledge base. It is in the form of IF-THEN-ELSE rules.

### Knowledge Acquisition

The success of any expert system majorly depends on the quality, completeness, and accuracy of the information stored in the knowledge base.

The knowledge base is formed by readings from various experts, scholars, and the Knowledge Engineers. The knowledge engineer is a person with the qualities of empathy, quick learning, and case analyzing skills.

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The membership functions work on fuzzy sets of variables.

## Membership Function

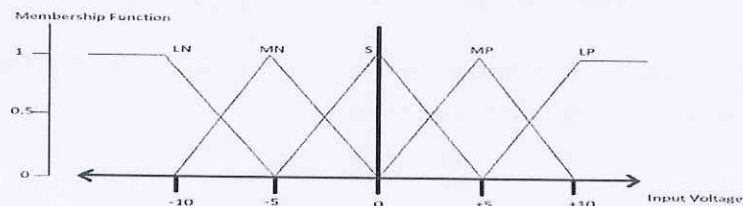
Membership functions allow you to quantify linguistic term and represent a fuzzy set graphically. A membership function for a fuzzy set  $A$  on the universe of discourse  $X$  is defined as  $\mu_A: X \rightarrow [0, 1]$ .

Here, each element of  $X$  is mapped to a value between 0 and 1. It is called membership value or degree of membership. It quantifies the degree of membership of the element in  $X$  to the fuzzy set  $A$ .

- x axis represents the universe of discourse.
- y axis represents the degrees of membership in the  $[0, 1]$  interval.

There can be multiple membership functions applicable to fuzzify a numerical value. Simple membership functions are used as use of complex functions does not add more precision in the output.

All membership functions for LP, MP, S, MN, and LN are shown as below –



The triangular membership function shapes are most common among various other membership function shapes such as trapezoidal, singleton, and Gaussian.

Here, the input to 5-level fuzzifier varies from -10 volts to +10 volts. Hence the corresponding output also changes.

4. What are Expert Systems? Discuss Characteristics, Capabilities and Components of Expert Systems.

Ans: The expert systems are the computer applications developed to solve complex problems in a particular domain, at the level of extra-ordinary human intelligence and expertise.

### Characteristics of Expert Systems

- High performance
- Understandable
- Reliable
- Highly responsive

### Capabilities of Expert Systems

The expert systems are capable of –

- Advising
- Instructing and assisting human in decision making
- Demonstrating
- Deriving a solution
- Diagnosing
- Explaining

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It explains how the ES has arrived at a particular recommendation. The explanation may appear in the following forms –

- Natural language displayed on screen.
- Verbal narrations in natural language.
- Listing of rule numbers displayed on the screen.

The user interface makes it easy to trace the credibility of the deductions.

### Requirements of Efficient ES User Interface

- It should help users to accomplish their goals in shortest possible way.
- It should be designed to work for user's existing or desired work practices.
- Its technology should be adaptable to user's requirements; not the other way round.
- It should make efficient use of user input.

### Expert Systems Limitations

No technology can offer easy and complete solution. Large systems are costly, require significant development time, and computer resources. ESs have their limitations which include –

- Limitations of the technology
- Difficult knowledge acquisition
- ES are difficult to maintain
- High development costs

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He acquires information from subject expert by recording, interviewing, and observing him at work, etc. He then categorizes and organizes the information in a meaningful way, in the form of IF-THEN-ELSE rules, to be used by inference machine. The knowledge engineer also monitors the development of the ES.

### Inference Engine

Use of efficient procedures and rules by the Inference Engine is essential in deducting a correct, flawless solution.

In case of knowledge-based ES, the Inference Engine acquires and manipulates the knowledge from the knowledge base to arrive at a particular solution.

In case of rule based ES, it –

- Applies rules repeatedly to the facts, which are obtained from earlier rule application.
- Adds new knowledge into the knowledge base if required.
- Resolves rules conflict when multiple rules are applicable to a particular case.

To recommend a solution, the Inference Engine uses the following strategies –

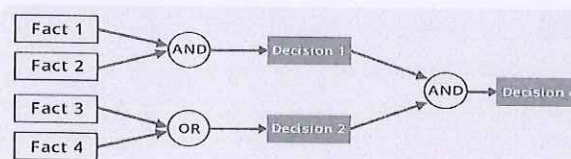
- Forward Chaining
- Backward Chaining

### Forward Chaining

It is a strategy of an expert system to answer the question, "What can happen next?"

Here, the Inference Engine follows the chain of conditions and derivations and finally deduces the outcome. It considers all the facts and rules, and sorts them before concluding to a solution.

This strategy is followed for working on conclusion, result, or effect. For example, prediction of share market status as an effect of changes in interest rates.

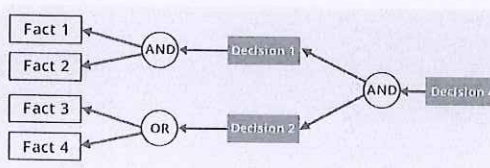


### Backward Chaining

With this strategy, an expert system finds out the answer to the question, "Why this happened?"

On the basis of what has already happened, the Inference Engine tries to find out which conditions could have happened in the past for this result. This strategy is followed for finding out cause or reason.

For example, diagnosis of blood cancer in humans.



### User Interface

User interface provides interaction between user of the ES and the ES itself. It is generally Natural Language Processing so as to be used by the user who is well-versed in the task domain. The user of the ES need not be necessarily an expert in Artificial Intelligence.



**School of RAC School Skills**

**Session: 2020-21 (Summer Semester)**

**B. Voc. 1<sup>st</sup> Semester,**

**Makeup Examination**

**Course Code: RAC1105**

**Time: 3 Hours**

**Course Name: RAC Systems Component Testing and performance**

**Max. Marks: 100**

**Instruction: In section A write option as well as detailed answer.**

**Section – A**

**20X01 = 20 Marks**

1. About 25% of the liquid leaving the metering device immediately vaporizes, this is called?
  - (a) Subcooled gases
  - (b) Superheated gases
  - (c) Flash gas
  - (d) None of above
2. R134a is used as replacement for?
  - (a) R404
  - (b) R12
  - (c) R125
  - (d) R11
3. \_\_\_\_\_ is mandatory during service and or installation?
  - (a) Reclaiming
  - (b) Recycling
  - (c) Recovery
  - (d) None of the above
4. Purpose of recovery is to \_\_\_\_\_ of CFC, HCFC and HFC refrigerants?
  - (a) Increase
  - (b) Reduce emissions
  - (c) Ignore
  - (d) Stop
5. Enthalpy is defined as \_\_\_\_\_ ?
  - (a) Pressure content
  - (b) Cooling content
  - (c) Work content
  - (d) Heat content
6. \_\_\_\_\_ is the point at which the addition or removal of heat will result in a change of state?
  - (a) Critical temperature
  - (b) Saturation pressure
  - (c) Saturation temperature
  - (d) None of above
7. During a change of state, the \_\_\_\_\_ remains constant?
  - (a) Critical temperature
  - (b) Saturation pressure
  - (c) Temperature
  - (d) Pressure
8. \_\_\_\_\_ absorbs heat from area to be cooled?



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- (a) Evaporator (b) Compressor  
(c) Expansion valve (d) Condenser
9. Increases pressure on the high-side of the system?  
(a) Evaporator (b) Compressor  
(c) Expansion Valve (d) Condenser
10. It takes \_\_\_\_\_ to melt one pound of ice at 32°F?  
(a) 144 Btu (b) 144 kJ  
(c) 144 J (d) 144 W
11. \_\_\_\_\_ occurs when heated air rises and cool air takes its place?  
(a) Natural conduction (b) Natural convection  
(c) Natural radiation (d) None of the above
12. \_\_\_\_\_ heat can travel through space without heating it?  
(a) Conduction (b) Convection  
(c) Radiation (d) None of the above
13. \_\_\_\_\_ also known as hidden heat?  
(a) Latent Heat (b) Sensible Heat  
(c) Specific Heat (d) None of the above
14. Pressure is defined as?  
(a) Area per unit force (b) Force per unit volume  
(c) Force per unit area (d) None of the above
15. The atmosphere exerts a pressure of \_\_\_\_\_ at sea level?  
(a) 14.696 psi (b) 14.696 bar  
(c) 14.696 mm of Hg (d) None of the above
16. Pressure gauges read \_\_\_\_\_ when opened to the atmosphere?  
(a) 14.696 psi (b) 14 bar  
(c) 14.696 mm of Hg (d) None of the above
17. \_\_\_\_\_ is described as any substance that occupies space and has mass?  
(a) Critical temperature (b) Saturation pressure  
(c) Temperature (d) Matter
18. Exert all their pressure downward?  
(a) Solid (b) Liquid  
(c) Gas (d) None of the above
19. Gas molecules travel at random in \_\_\_\_\_ directions?



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- (a) Upward (b) Downward  
(c) All (d) Side

20. \_\_\_\_\_ is the property of matter that responds to its gravitational attraction (excludes gravitational force)?

- (a) Weight (b) Mass  
(c) Inertia (d) Thrust

### Section – B

06X05 = 30 Marks

(Attempt any 06 questions out of 08 questions)

21. Explain heat and its methods to transfer from one place to another place.
22. What is pressure, explain its types and different units of measurement?
23. What is temperature also explain conversion of various temperature scales?
24. Explain sensible and latent heat.
25. What are different types of matter explain in details.
26. Explain working of re-circulation cooling apparatus.
27. Explain energy, work and power.
28. Explain subcooling and superheating and saturated liquid/ vapour.

### Section – C

05X10 = 50 Marks

29. How to draw a PH chart explain the complete procedure step by step?
30. Explain the any three gas laws with diagram.
31. Explain VCR cycle with neat sketches.
32. Explain the following terms: -
  - (a) Refrigeration.
  - (b) One ton of refrigeration.
33. Explain the working of cascade refrigeration system.





**School of RAC School Skills**

**Session: 2020-21 (Summer Semester)**

**B. Voc. 1<sup>st</sup> Semester,**

**Makeup Examination**

**Course Code: RAC1105**

**Time: 3 Hours**

**Course Name: RAC Systems Component Testing and Performance**

**Max. Marks: 100**

**Instruction: In section A write option as well as detailed answer.**

**Section – A**  
**Answer Sheet**

20X01 = 20 Marks

1. About 25% of the liquid leaving the metering device immediately vaporizes, this is called?  
(c) Flash gas
2. R134a is used as replacement for?  
(b) R12
3. \_\_\_\_\_ is mandatory during service and or installation?  
(c) Recovery
4. Purpose of recovery is to \_\_\_\_\_ of CFC, HCFC and HFC refrigerants?  
(b) Reduce emissions
5. Enthalpy is defined as \_\_\_\_\_ ?  
(d) Heat content
6. \_\_\_\_\_ is the point at which the addition or removal of heat will result in a change of state?  
(c) Saturation temperature
7. During a change of state, the \_\_\_\_\_ remains constant?  
(a) Temperature
8. \_\_\_\_\_ absorbs heat from area to be cooled?  
(a) Evaporator
9. Increases pressure on the high-side of the system?  
(b) Compressor
10. It takes \_\_\_\_\_ to melt one pound of ice at 32°F?  
(a) 144 Btu
11. \_\_\_\_\_ occurs when heated air rises and cool air takes it place?



- (b) Natural convection
12. \_\_\_\_\_ heat can travel through space without heating it?
- (c) Radiation
13. \_\_\_\_\_ also known as hidden heat?
- (a) Latent Heat
14. Pressure is defined as?
- (c) Force per unit area
15. The atmosphere exerts a pressure of \_\_\_\_\_ at sea level?
- (a) 14.696 psi
16. Pressure gauges read \_\_\_\_\_ when opened to the atmosphere?
- (d) None of the above
17. \_\_\_\_\_ is described as any substance that occupies space and has mass?
- (d) Matter
18. Exert all their pressure downward?
- (d) Solid
19. Gas molecules travel at random in \_\_\_\_\_ directions?
- (c) All
20. \_\_\_\_\_ is the property of matter that responds to its gravitational attraction (excludes gravitational force)?
- (a) Weight

## Section – B

06X05 = 30 Marks

(Attempt any 06 questions out of 08 questions)

21. Explain heat and its methods to transfer from one place to another place.

**Answer: -**

Conduction: Heat travels from one molecule to another within a substance

Heat travels from one substance to another

Not all materials conduct heat at the same rate

Example: Heat will travel through a copper rod from the end that is being heated through to the end of the copper tube

- Convection: Natural convection occurs when heated air rises and cool air takes its place. The best example of this is baseboard heaters installed in your home

They don't use a fan to blow air throughout the home but rather heat air throughout the house. Remember also with this warm air rises and cold air falls

- Radiation: Radiant heat passes through air, heating the first solid object with which it comes in contact. These heated objects, in turn, heat the surrounding area. Radiant heat can travel through a vacuum. Radiant heat can travel through space without heating it Example of radiation: An electric heater that glows bright red. Example: The sun shining down on the backyard of a residence.

22. What is pressure, explain its types and different units of measurement?

**Answer: -**

Defined as force per unit area, Often expressed in pounds per square inch or psig (pounds per square inch gauge)

Example: if a 50lb weight rest on a surface that is 1 square inch, the pressure is 50psi

Example: If a 50lbs weight rest on a surface of 50 square inches, the pressure is 1 psi

23. What is temperature also explain conversion of various temperature scales?

Is defined as the level of heat or heat intensity. Can be measured with a Thermometer

There are several scales. English system: Fahrenheit. Metric System: Celsius. Celsius

absolute scale: Kelvin. Fahrenheit absolute scale: Rankine: Absolute zero is referred to as the temperature at which all molecular activity stops. Said to be @-460 Fahrenheit.

24. Explain sensible and latent heat.

Heat transfer that results in a change in temperature of a substance

Sensible heat transfers can be measured with a thermometer

Example of a sensible heat transfer: Changing the temperature of a sample of water from 68 to 69 degrees F.

What are different types of matter explain in details. Exert all their pressure downward. The molecules of solid water have a great attraction for each other and tend to bond together well. Exert pressure downward and outward. Example: glass of water. The outward pressure is what makes water seek its own level. The pressure is proportional to the depth of the water Gas molecules travel at random in all directions. If you open a pressurized vessel of a gas substance the molecules when opened will fly everywhere.

25. Explain working of re-circulation cooling apparatus.:

Circulation fan: The main function of this fan is to move air to and from the room.

Air conditioning unit: It is a unit, which consists of cooling and dehumidifying processes for summer air conditioning or heating and humidification processes for winter air conditioning.

Supply duct: It directs the conditioned air from the circulating fan to the space to be air-conditioned at the proper point.

Supply outlets: These are the grills, which distribute the conditioned air evenly in the room.



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**Return outlets:** These are the openings in a room surface which allow the room air to enter the return duct.

**Filters:** The main function of the filters is to remove dust, "dirt and other harmful bacteria"s form the air.

26. Explain energy, work and power.

Word is simply Force x distance. Force is presented in pounds. Distance is presented in feet  
Example: How much work is done to move a 100lb object 50 ft. Answer: Force x Distance so  
 $100 \times 50 = 5,000$  ft lbs. Is the rate at which work is done. Work per unit time is expressed in  
ft-lbs/min. Rated in Horsepower (HP).  $1 \text{ HP} = 33,000$  ft-lbs/min. Electrical power is measure  
in watts.  $1 \text{ HP} = 746$  Watts.  $1 \text{ Watt} = 3.413$  Btu's.  $1 \text{ kw} = 3,413$  Btu's

27. Explain subcooling and superheating and saturated liquid/ vapour.

Standard air-cooled systems are designed to operate with a minimum of 10 degrees F of subcooling

High efficiency condensers operate with more subcooling than standard efficiency condensers

Figured by subtracting the condenser saturation temperature from the condenser outlet temperature

### Section – C

05X10 = 50 Marks

28. How to draw a PH chart explain the complete procedure step by step?

On the P-H diagram, pressure is indicated on the y-axis and enthalpy is indicated on the x-axis. Typically enthalpy is in units of Btu/lb and pressure is in units of pounds per square inch (psi). The upside down U figure shown on the diagram designates the points at which the refrigerant changes phase. The left vertical curve indicates the saturated liquid curve and the right vertical curve indicates the saturated vapor curve. The region in between the two curves describe refrigerant states that contain a mixture of both liquid and vapor. The locations to the left of the saturated liquid curve indicate that the refrigerant is in liquid form and locations to the right of the saturated vapor curve indicate that the refrigerant is in vapor form. The point at which the two curves meet is called the critical point. The importance of this point is that at any point above, no additional pressure will change the vapor into a liquid. A simplified pressure-enthalpy diagram is shown below, describing this information.

29. Explain the any three gas laws with diagram.

Answer:

a. Temperature lines: This line travel through the PH graph. Under the dome temperature line shows constant pressure because of latent heat for phase change.

b. Pressure lines: Y-axis shows pressure axis, These lines are straight lines perpendicular to the pressure axis.

c. Enthalpy lines: X-axis shows enthalpy axis. These are the straight lines perpendicular to the x-axis.

Entropy lines: We can find entropy lines in superheat region of the graph. These lines are curved lines, start from saturated vapor region and travel to the right side of graph.

d. Specific Volume: - These lines are very thin lines, these line travel through the graph. These lines starts from subcooled and travel towards the super-heated region.

30. Explain VCR cycle with neat sketches.

- Compressor compresses refrigerant having low temperature and pressure, after compression refrigerant vapour has a stage of high pressure and pressure (superheated vapour). This high temperature is not required so we need to reject it, in condenser this temperature(heat) has been rejected into atmosphere. This heat is gained from the evaporator.

- Condenser converts superheated vapour from compressor into subcooled liquid. At the outlet of condenser refrigerant normally has temperature range close to 35-40 degree centigrade. After condenser liquid refrigerant enters into expansion valve, here refrigerant loses its pressure because pipe friction. Pressure and temperature are proportional so sudden large drop in refrigerant creates sudden temperature. Expansion valve almost work opposite of compressor.

- After expansion valve liquid refrigerant having low temperature and pressure enters into a heat exchanger named as evaporator. Here low temperature refrigerant exchanges heat with surrounding (say room), this heat cause evaporation (not boiling) in refrigerant, in this heat exchange process we get cooling on our fridge or cold air through AC.

- At the outlet of evaporator, refrigerant is a mixture of liquid and vapour. It enter into compressor through accumulator and repeat cycle.

31. Explain the following terms: -

Refrigeration: - Process of transferring heat from a place where it is objectionable to where it makes little or no difference

Heat naturally flows from a warmer substance to a cooler substance

Heat will flow naturally from a 100°F house if the outside temperature is 80°F

Mechanical refrigeration is needed if house is 80°F and outside temperature is 100°F

One ton of refrigeration: - It takes 144 Btu to melt one pound of ice at 32°F

2,000 pounds of ice (1 ton) will require 288,000 Btu to melt (144 Btu x 2,000 pounds)

If the melting of 1 ton of ice takes place in one day (24 hours), 12,000 Btu must be absorbed by the ice every hour (288,000 Btu / 24 hours)

32. Explain the working of cascade refrigeration system.

In a cascade system a series of refrigerants with progressively lower boiling points are used in a series of single stage units. The condenser of lower stage system is coupled to the evaporator of the next higher stage system and so on. The component where heat of condensation of lower stage refrigerant is supplied for vaporization of next level refrigerant is called as cascade condenser. Figures 13.6(a) and (b) show the schematic and P-h diagrams of a two-stage cascade refrigeration system. As shown, this system employs two different refrigerants operating in two individual cycles.

They are thermally coupled in the cascade condenser. The refrigerants selected should have suitable pressure-temperature characteristics. An example of refrigerant combination is the use of carbon dioxide (NBP =  $-78.40^{\circ}\text{C}$ ,  $T_{cr} = 31.06^{\circ}\text{C}$ ) in low temperature cascade and ammonia (NBP =  $-33.33^{\circ}\text{C}$ ,  $T_{cr} = 132.25^{\circ}\text{C}$ ) in high temperature cascade. It is possible to use more than two cascade stages, and it is also possible to combine multi-stage systems with cascade systems.

Applications of cascade systems:

- i. Liquefaction of petroleum vapours
- ii. Liquefaction of industrial gases
- iii. Manufacturing of dry ice
- iv. Deep freezing etc



School of General Education  
Session: 2020-21 (Summer Semester)  
B. Voc. Program, 3<sup>rd</sup> Semester,  
Makeup Examination

*with Answer key*

Course Code: GEN1303

Course Name: Entrepreneurship Development

Instruction: Write Answers legibly in English Language only.

Time: 3 Hours

Max. Marks: 100

## Section – A

20 objective type questions, each question carries 01 mark

1. The term Entrepreneurship refers to-
  - A) A subject of Study about Business & Management
  - B) Process of Introducing innovation
  - C) The creative process of organising resources for the growth of business
  - D) **None of the above**
2. Entrepreneurship is viewed as a distinct Discipline because-
  - A) It has a systematic body of scientific knowledge
  - B) It has a well organised theoretical framework of practices
  - C) It is practiced as a distinct field of professional occupation
  - D) **All of the above**
3. The act of turning new and imaginative ideas into useful reality refers to.....
  - A) Creativity
  - B) **Innovation**
  - C) Imagination
  - D) All of the above
4. A Role model is someone who tends to-
  - A) Influence a potential entrepreneur's career choice and style
  - B) Provide Moral-support to anyone who wants to become an entrepreneur
  - C) Be a part of the Professional support network of an entrepreneur
  - D) **All of the above**
5. An entrepreneur establishes a new entity in the form of-
  - A) An enterprise for producing goods and (or) services
  - B) An enterprise for providing employment opportunities
  - C) **Both a & b**
  - D) None of the above
6. Adaptive Entrepreneurs are characterized as....
  - A) Imitators
  - B) Imitative entrepreneurs
  - C) One who adopt successful innovations created by innovative entrepreneurs.
  - D) **All of the above**
7. The process of Entrepreneurship eventually leads to-
  - A) Growth of Industrialization
  - B) Creation of employment opportunities
  - C) Increase in Consumption
  - D) **All of the above**
8. The concept of Intrapreneurship refers to-
  - A) Embarking on a new innovative idea
  - B) Entrepreneurial Mindset
  - C) **Practice of Entrepreneurship by any employed person**
  - D) None of the above
9. Which one of the following is not an Entrepreneur-
  - A) Amit Bunker
  - B) Javed Akhtar
  - C) Karishanbahu Sahoo
  - D) **All of the above**

10. Who is the man behind the popular Brand "Nirma"-
- A) Prem Ganapathy
  - B) Yash Bhanage
  - C) Bhupendrabhai Shah**
  - D) None of the above
11. Ankit Bhati & Bhavish Agarwal are known as the Founder of-
- A) "MakeMyTrip"
  - B) "iD Fresh Food"
  - C) "OYO"
  - D) None of the above**
12. "D-Mart" was founded in-
- A) 2001
  - B) 1998
  - C) 2000
  - D) None of the above**
13. The full form of TIASN is-
- A) Technological Intervention for addressing Societal Needs**
  - B) Technological Innovation for addressing Societal Needs
  - C) Technological Intervention for achieving Socioeconomic goals
  - D) None of the above
14. RIICO started working from-
- A) 1st January, 1980**
  - B) 11 January 1980
  - C) 6 January 1981
  - D) 15 January 1989
15. Beneficiary oriented Schemes under SEED Program is-
- A) Long Term Core Support-Technological Advancement for Rural Areas (TARA)
  - B) Technological Intervention for addressing Societal Needs (TIASN)
  - C) Scheme for Young Scientists & Technologist (SYST)
  - D) Scheduled Caste Sub Plan (SCSP)**
16. The Institutional support system for entrepreneurs has been designed at which of the following levels:
- A) At Central and State Government level
  - B) At District level
  - C) At NGOs level
  - D) All of the above**
17. Which one of the following is a crucial factor in developing strong working relationships among the Startup team:
- A) Clear initial assignment of roles
  - B) Effective communication
  - C) Careful attention to perceived fairness
  - D) All of the above**
18. Entrepreneurial Marketing tend to acquire and retain profitable customers through-
- A) Innovative approaches to risk management
  - B) Innovative approaches to resource leveraging
  - C) Innovative approaches to value creation
  - D) All of the above**
19. According to Spearman Creativity is marked by the ability to-
- A) Bring into existence
  - B) Invest with a new form and to produce through imaginative skill
  - C) Make or bring into existence something new
  - D) All of the above**

20. Which one of the following is a step in the traditional approach to Entrepreneurship-
- A) Identification and evaluation of the opportunity,
  - B) Development of the business plan,
  - C) Determination of the required resources
  - D) **All of the above**

### Section – B

**06 long answer type questions, each question carries 05 marks.**

(Attempt any 06 questions out of 08 questions)

Q.1 Write briefly about the different aspects of Entrepreneurship Process.

Answer- Following are some of the important aspects or steps in entrepreneurial process:

- (1) Identification and evaluation of the opportunity,
- (2) Development of the business plan,
- (3) Determination of the required resources, and
- (4) Management of the resulting enterprise.

Different Aspects of this step relates to – Creativity and Business Idea generation, Recognition of entrepreneurial opportunity, Assessment of entrepreneurial opportunity (in terms of real and perceived value, risk and return and Evaluating entrepreneurial opportunity (in terms of personal & entrepreneurial skills and competencies, prevailing and future circumstances and competitive environment)

Q.2 Describe the concept of new venture financing.

Answer: New Venture Financing refers to the process of financing and funding a start-up or high-growth business. This further deals with the various options that a company has for financing at all stages of its life-cycle – from seed-stage to later-stage and will explore the options that companies have for exit (both M&A and IPO).

This can be defined as the financing for startup companies and small enterprises, that involves a considerable amount of risk but are supposed to have long-term growth potential, i.e. the project can earn a high rate of return. A budding company, which is not yet ready to raise funds from the financial market through public offering may seek venture capital. It implies a financial statement that aims at supporting new and expanding firms, during their primary stages.

Method of New Venture Financing-

- Equity Financing: A firm needs funds for a longer period to survive and grow, but as venture capital firm is a new company the firm is not able to give timely returns to its investors, for which equity financing proves beneficial. The investor's contribution is not more than 49% of the total stake, and so the ultimate power remains with the entrepreneur.
- Conditional Loan: Conditional loans are the one that does not carry interest and are repayable to the lender in the form of royalty after the venture capital undertaking is able to make revenue. The royalty rate may vary from 2% to 15%, on the basis of factors such as gestation period, external risk and cash flow patterns.

Q.3. Explain briefly the traits and types of entrepreneurs.

Answer- Entrepreneurial Traits-

- 1. They dream big and have a passion for positive change
- 3. They have a clear vision of what they want to achieve
- 4. They engage in calculated risk taking and keep their focus
- 5. They are self-directed and self-motivated and are results-driven
- 7. They have a strong desire to be independent

The different types of entrepreneurs- Based on the type of business activities, use of technology, area of operations, and gender are as under-

- (1) According to the types of business -Trading Entrepreneur, Industrial Entrepreneur, Agricultural Entrepreneur, Service Entrepreneur
- (2) According to the use of technology – Technical Entrepreneur, Non-technical Entrepreneur
- (3) According the Area – Urban Entrepreneur, Rural Entrepreneur
- (4) According to gender- Men Entrepreneur, Women Entrepreneur

Another Classification of the types of Entrepreneurs is as under-

1. Innovative Entrepreneurs
2. Imitative Entrepreneurs/ Adaptive Entrepreneurs
3. Fabian Entrepreneurs
4. Drone Entrepreneurs

Q.4. What are the different financial assistance schemes of RIICO.

Answer: Different Financial Assistance Schemes of RIICO Includes the following-

- ◆ Project Loan
- ◆ Credit Scheme for Builders/Commercial Complex/ Residential Complexes
- ◆ Financing of Industrial Land (Download Form)
- ◆ Scheme for Financing against Immovable Property
- ◆ Multi Purpose Medium Term Loan for Good Borrowers
- ◆ Working Capital Term Loan
- ◆ Scheme for Financing Service Sector
- ◆ Scheme for Corporate Loan
- ◆ Equipment Finance Scheme (EFS)
- ◆ Flexi Loan for Hotels, Hospitals & Nursing Homes
- ◆ Hotel and Tourism Related Activities
- ◆ Loan Scheme for Young/First Generation Entrepreneurs

Q.5 Discuss some of the challenges faced by an entrepreneur.

Answer- Challenges in Managing and growing an enterprise: Following are the Biggest Challenges for New Entrepreneurs:

Financing: As a new entrepreneur, you'll be starting from scratch, which means you'll need to start networking like crazy and thinking through all your possible funding options before landing on one.

Team Building: Picking the right team for a startup is stressful and difficult. It's not enough to find candidates who fill certain roles – you also need to consider their cost to the business, their culture fit and how they'll work as part of your overall team.

Being the visionary: As a new entrepreneur is expected to come up with the ideas. When a competitor emerges, it will be your responsibility to come up with a response plan. When your team hits an impenetrable obstacle, your job will be to come up with an alternative plan to move forward. This demands on-the-spot creative thinking.

Dealing with the unknown: How long will your business exist? How profitable will your business be? Will customers like your product? None of these questions has a solid, reliable answer, even in startups based on great ideas. Dealing with this volatility is one of the hardest parts of emerging as a new entrepreneur.

Q.6 What do you mean by Entrepreneurial Marketing?

Answer- The term "marketing" means different things to different individuals. Some people view it as advertising, some as selling, and others as trading. Advertising, selling, and/or trading are only aspects of marketing.

For the sake of understanding we can define the concept as "Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large."

Hisrich defines marketing as “the process by which the decisions are made in a totally interrelated changing business environment on all the activities that facilitate exchange in order that the targeted group of customers is satisfied, and the defined objectives are accomplished.

Recently, entrepreneurial marketing has gained popularity in marketing and entrepreneurship. This has been proactive identification and exploitation of opportunities for acquiring and retaining profitable customers through innovative approaches to risk management, resource leveraging and value creation.

The most common features of entrepreneurial marketing include innovation, risk taking, and being proactive. Entrepreneurial marketing campaigns try to highlight the company's greatest strengths while emphasizing their value to the customer. Focusing on innovative products or exemplary customer service is a way to stand out from competitors. They make this pitch using cheap and accessible tools including viral videos, Tweets, Facebook pages, and email marketing. Any and all marketing strategies can be considered as long as they produce results.

Q.7 Write a short note on the feasibility study for new venture.

Answer- Feasibility analysis is designed to assess whether your entrepreneurial endeavor is, in fact, feasible or possible. By evaluating your management team, assessing the market for your concept, estimating financial viability, and identifying potential pitfalls, you can make an informed choice about the achievability of your entrepreneurial endeavor. A feasibility analysis is largely numbers driven and can be far more in depth than a business plan.

- A feasibility study may become the basis for the business plan, which outlines the action steps necessary to take a proposal from ideation to realization. A feasibility study allows a business to address where and how it will operate, its competition, possible hurdles, and the funding needed to begin. The business plan then provides a framework that sets out a map for following through and executing on the entrepreneurial vision.
- The feasibility study acts as an investigative tool to assess the potential, viability or practicability of a new business. It is an excellent instrument for the prediction of the likelihood of success or failure of a new business venture. It may also be adopted in the case of incorporation of new products or ideas into the business mix.

Q.8 Briefly discuss the important aspects of GST laws.

Answer- Understanding Taxation and Accounting Laws- There are a broad variety of taxes, such as, central tax, state tax and even local taxes that may be applicable for certain businesses. For billing and taxation, every business owner required to be registered under the GST act.

The knowledge of business Laws and GST laws for an entrepreneur is very much essential now a days. Planning to form a company (proprietor, private limited or limited) or already in business, every entrepreneur is liable to follow these basic Indian government's legal laws to function their business in the country.

Usually, most of the startup businessmen and entrepreneurs approach a legal business consultant to understand documentation required for forming a legal business entity, granting PAN number, GST and opening a current account and other rules and guidelines to start functioning.

Startup in India is like the face of a new innovative idea under practical application and expression of an idea that is implemented to be worked on. A startup is an entrepreneurial business which is eager to catch the market pace and walk with matching the footsteps for other business to exist in the market for a long time and secure a position.

## Section – C

05 essay type questions, each question carries 10 marks.

Q.1 Explain how Banking & Financial institutions helps and support new entrepreneurs.

Answer: National & State level Institutional Support to Entrepreneurs is provided to the Entrepreneurs in the form of Banking Institutions like Nationalised commercial Banks (Public & Private Sector), Small Finance Banks, Payment Banks and Co-operative Banks, RRBs etc. Support to Entrepreneurs is provided to the Entrepreneurs in the form of Financial Institutions like SIDBI, IDBI, ICICI, IFCI, IRCI, SFCs like RFC in Rajasthan etc.

Banking Institutions like Nationalised commercial Banks (Public & Private Sector), Small Finance Banks, Payment Banks and Co-operative Banks, RRBs etc.

- Banks meet the need of financial assistance of a new startup company in the form of short term and long term loans.
- Banks provide working capital assistance to help entrepreneurs meet their day to day needs of available fund
- Banks advise entrepreneurs on sustainable lines of investment by analyzing the pro and cons of each investment.
- In addition to the normal lending and other service, banks now also engage in business advisory, guaranty and other consultancy services which help entrepreneurs in the promotion and financing of entrepreneurship activities.

Financial Institutions like SIDBI, IDBI, ICICI, IFCI, IRCI, SFCs like RFC in Rajasthan etc.

- SIDBI: stand for Small Industries Development Bank of India. This acts as the Principal Financial Institution for Promotion, Financing and Development of the Micro, Small and Medium Enterprise (MSME) sector .
- IDBI: Stand for Industrial Development Bank of India. This provide credit and other financial facilities for the development of the MSMEs
- ICICI: Stand for Industrial Credit and Investment Corporation of India. Earlier this was a development financial institution but now as a Bank offering only project finance to a diversified financial services group.
- IFCI: Industrial Finance Corporation of India, is a Non-Banking Finance Company and provides financial support for the diversified growth of Industries. This provide finance for projects such as airports, roads, telecom, power, real estate, manufacturing, services sector and such other allied industries.
- IRCI: Industrial Reconstruction Corporation of India assist rehabilitation of sick industrial units or rehabilitation of units likely to face closure, but showing promise of viability.
- SFCs: Stand for State Financial Corporations like Rajasthan Financial Corporation (RFC) in Rajasthan State and HFC in Haryana etc. SFCs help in ensuring balanced regional development, higher investment, more employment generation and broad ownership of various industries in the respective state.
- RFC stands for Rajasthan Financial Corporation. RFC is the apex State Financial Corporation (SFC) in the state for providing long term financial support to tiny, small and medium scale industries in the State of Rajasthan. RFC has network of 21 Branch offices and one Facilitation Center in the State. You may discuss your project with our Branch Managers and submit your application to the concerned Branch in whose jurisdiction you propose to set up your industrial unit.

Q.2 What are different entrepreneurial Myths?

Answer: Myths About Entrepreneurship- There are certain ideas and notions about entrepreneurs that may discourage you from starting your own business. These myths aren't necessarily all true.

Myth #1: Entrepreneurs don't have a personal life

Myth #2: Entrepreneurs take lots of risks (in fact Entrepreneurs take calculated risks)

Myth #3: Entrepreneurs are only motivated by money

Myth #4: Entrepreneurs have great ideas

Myth #5: Anyone can be an Entrepreneur



- Myth #6: Entrepreneurs have formal training and education  
Myth #7: Entrepreneurs don't quit until they succeed  
Myth #8: Entrepreneurship is genetic (You are not born an entrepreneur)  
Myth #9: Entrepreneurs are their own boss.  
Myth #10: Entrepreneurs are usually rich.  
Myth #11: Entrepreneurship requires huge funding  
Myth #12: Entrepreneurs always take huge risks  
Myth #13: If my product or service is good, I'll be successful. Not necessarily.  
Myth #14: Only those who start a business need entrepreneurship

Q.3 Write a short description of the success story of OYO.

Answer- The OYO success story: Ritesh Agarwal world's youngest self made billionaire

OYO rooms has been one of the most successful start-ups in India being the country's largest budget hotel chain. In the OYO model, hotels are not owned, instead OYO ties up with certain hotels and acquires a few rooms to be given to people who want to avail the services of OYO. It focuses on standardizing the hotels in the non-branded hospitality sector. OYO rooms has been one of the most successful ventures as it has managed to solve the issue of affordability, cleanliness as well as availability of budget hotels across all Tier-I and Tier-II cities in the country. This success story is the brainchild of the man with the OYO vision who is known as Ritesh Agarwal, a successful entrepreneur is just 26 years old and has had several achievements to his credit. Born to a humble family in Cuttack, his journey of becoming one of the most successful entrepreneurs wasn't a walk in the park. In fact, in the era of start-ups, he had to face several difficulties in trying to make his unconventional idea work.

Q.4 Explain briefly the Govt. Schemes and Programs for entrepreneurs.

Answer- The emergence of Entrepreneurship in a society depends on several influencing factors. The most important among them are considered to be the individual, environment, Socioeconomic support system and institutional setup. The environment and the institutional setup are considered to be exerting direct influence on entrepreneurship. That's why the Eco-system for entrepreneurship development and inspiring, guiding and supporting the potential entrepreneurs through the viable support system becomes essential. In our country, there is well-established and robust support system available for Entrepreneurs and Enterprises at the National, State, District, Block Development and Village level.

An Entrepreneurs can get benefits from a good number of Govt. Schemes and Programs related to different economic sectors and ministries. Following Govt. Programs are the ways through which an entrepreneur is entitled to get the benefit of the opportunities to start with the assistance and resources provided by the Government at different level in the country.

1. Start-up India
2. Stand-up India
3. Make-in-India
4. Atal Innovation Mission
5. Support to Training and Employment for Women (STEP)
6. Digital India
7. PMKVY, PMEGP, SEED, WEP and ASPIRE
8. Pradhan Mantri Mudra Yojna (Mudra Loan)

Startup India programme was launched on 16th January 2016. **The** programme was launched to promote bank financing for start-up ventures to boost entrepreneurship and encourage start-ups with jobs creation. "Start Up India" is a revolutionary scheme that has been started to help the people who have ideas and capabilities and wish to start their own business.

The vision of this Program is to encourage and support the job seekers to become job creator by starting their own micro or small level enterprise or startup business without any hassles. The program provide funding support and incentives to such job creators related to getting patent of their innovation and by simplification of the Startup process.

Stand up India Program was launched on 5th April 2016. The scheme was launched to support entrepreneurship among women and SC & ST communities.

The scheme offers bank loans of between ₹10 lakh (US\$15,000) and ₹1 crore (US\$150,000) for scheduled castes and scheduled tribes and women setting up new enterprises outside of the farm sector. Debit Card (RuPay) for withdrawal of working capital.

The Make in India initiative was launched by Prime Minister in September 2014 as a part of the wider set of nation-building initiatives. This program is designed to transform India into a global design and manufacturing hub. For this Govt has identified 25 priority sectors to boost investment through FDI.

The main objective make in India initiative is-

To focus on job creation and skill enhancement in various sectors of the economy

To attract capital and technological investment in India

It also aims at high-quality standards and minimizing the impact on the environment.

To create a business-friendly atmosphere in the country by increasing ease of doing business as much as possible.

AIM is the flagship initiative of the Govt. to promote a culture of innovation and entrepreneurship in the country. The core functions of the Mission are as under:

Entrepreneurship promotion through Self-Employment and Talent Utilization, to support & Mentor the innovators to become successful entrepreneurs.

Innovation promotion: to provide a platform where innovative ideas are generated.

Objectives of AIM-

To develop and create awareness about new programmes and policies for fostering innovation in different sectors of the economy

To provide platform and collaboration opportunities for different stakeholders

To create an umbrella structure to oversee innovation ecosystem of the country.

The Digital India programme is a flagship programme of the Government of India with a vision to transform India into a digitally empowered society and knowledge economy.

In order to transform the entire ecosystem of public services through the use of information technology, the Government of India has launched the Digital India programme.

Vision of Digital India- The vision of Digital India programme is to transform India into a digitally empowered society and knowledge economy. The program is centered on three key vision areas namely Digital Infrastructure as a Core Utility to Every Citizen, Governance and Services on Demand and Digital Empowerment of Citizens.

Pradhan Mantri Kaushal Vikas Yojana (PMKVY) is the flagship scheme of the Ministry of Skill Development & Entrepreneurship (MSDE) implemented by National Skill Development Corporation.

The objective of this Skill Certification Scheme is to enable a large number of Indian youth to take up industry-relevant skill training that will help them in securing a better livelihood. Individuals with prior learning experience or skills will also be assessed and certified under Recognition of Prior Learning (RPL).

### **Q.5 Briefly discuss the Lean Startup approach.**

**Answer:** Lean startup approach is a methodology for developing businesses and products that aims to shorten product development cycles and rapidly discover if a proposed business model is viable; this is achieved by adopting a combination of business-hypothesis-driven experimentation, iterative product releases, and validated learning. Lean startup emphasizes customer feedback over intuition and flexibility over planning. This methodology enables recovery from failures more often than traditional ways of product development.

The lean startup methodology was first proposed in 2008 by Eric Ries, using his personal experiences adapting lean manufacturing principles to high-tech startup companies. The Lean Startup approach method teaches you how to drive a startup-how to steer, when to turn, and when to persevere-and grow a business with maximum acceleration.



**School of RAC School Skills**

**Session: 2020-21 (Summer Semester)**

**B. Voc. 3<sup>rd</sup> Semester,**

**Makeup Examination**

**Course Code: GEN1305**

**Time: 3 Hours**

**Course Name: Elementary Drawing**

**Max. Marks: 100**

**Instruction: In section A write option as well as detailed answer.**

**Section – A**

**20X01 = 20 Marks**

1. 1. Center line is?
  - (a) Continuous thick line
  - (b) Continuous thin line
  - (c) Chain thin line
  - (d) Dashed line
2. Use of center line is?
  - (a) Circular feature on a drawing
  - (b) To indicate cutting plane
  - (c) To show the plane
  - (d) To represent axis
3. What is purpose of technical Drawing?
  - (a) To show manufacturing drawing only
  - (b) to make one intended meaning drawing
  - (c) To show construction drawing only
  - (d) Both A and B
4. What is purpose of artistic drawing?
  - (a) To make attractive drawings
  - (b) To show the skill of artist
  - (c) To make subjectively interpreted drawing
  - (d) Both A and C
5. Size of A3 sheet?
  - (a) 296 X 420mm
  - (b) 287 X 320mm
  - (c) 287 X 420mm
  - (d) 297 X 420mm
6. In first angle front view is drawn
  - (a) Below the XY line
  - (b) Above the XY line
  - (c) Above the vertical plane
  - (d) Above the vertical plane
7. Technical drawing tools are used to draw
  - (a) Triangle and circles
  - (b) Curves and circles
  - (c) square and pentagon
  - (d) All of above
8. Use of reference grids in technical drawing?



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- (a) ) It has no use  
(b) To Position all shapes correctly  
(c) To Show position of object  
(d) It provide reference of previous drawings
9. Which pencil grade is hardest  
(a) 7H  
(b) 9H  
(c) 7B  
(d) 9B
10. H pencil is use to draw?  
(a) Boundary lines  
(b) Construction lines  
(c) Center lines  
(d) None of the above
11. Orthographic projection represents three dimensional objects in?  
(a) One dimension  
(b) Two dimension  
(c) Three dimension  
(d) All of the above
12. In orthographic projection, the projection lines are \_\_\_\_\_ to the projection plane?  
(a) Parallel  
(b) Orthogonal  
(c) Inclined  
(d) None of the above
13. The point, from which the observer is assumed to view the object, is called?  
(a) Center of projection  
(b) Point of projection  
(c) Point of observer  
(d) View point
14. In orthographic projection, the object is placed with one of its faces \_\_\_to the picture plane?  
(a) Inclined  
(b) Perpendicular  
(c) Parallel  
(d) None of the above
15. The two ways of drawing orthographic projection are?  
(a) First angle, second angle  
(b) First angle, third angle  
(c) Second angle, third angle  
(d) Second angle, fourth angle
16. Orthographic projection is also known as?  
(a) Single view projection  
(b) Two view projection  
(c) Multi view projection  
(d) All of the above
17. In third angle projection method, the object is supposed to be in  
(a) First quadrant  
(b) Second quadrant  
(c) Third quadrant  
(d) Fourth quadrant
18. 8. Projection line is?  
(a) Continuous thick line  
(b) Continuous thin line



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(c) Chain thin line

(d) Dashed line

19. Visible outline or edge is?

(a) Continuous thick line

(b) Continuous thin line

(c) Chain thin line

(d) Dashed line

20. The orthographic projection, projection lines are \_\_\_\_ to each other.

(a) Parallel

(b) Perpendicular

(c) Inclined

(d) Any of the above

## Section – B

06X05 = 30 Marks

(Attempt any 06 questions out of 08 questions)

21. What are factors which effect tolerance?

22. Write the difference between first angle and third angle views?

23. What are different types of errors which make measuring inaccurate

24. Write a short note on set square

25. Write a short note on the technical drawing.

26. What are different types of lines used to make technical drawing.

27. Write a short note on compound and geometric tolerance.

28. Write a short note on drawing templates and french curves.

## Section – C

05X10 = 50 Marks

29. Write a short note on micrometer.

30. What is tolerance? What are types are tolerance?

31. Write a short note on first angle projection and third angle projection?

32. Write a short note on vernier caliper.

33. What if fit? Explain it's types with neat sketches.





# BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

**Set – A**

**School of RAC School Skills**

**Session: 2020-21 (Summer Semester)**

**B. Voc. 3<sup>rd</sup> Semester,**

**Makeup Examination**

*Answer Key*

**Course Code: GEN1305**

**Time: 3 Hours**

**Course Name: Elementary Drawing**

**Max. Marks: 100**

**Instruction: In section A write option as well as detailed answer.**

## **Section – A**

**20X01 = 20 Marks**

1. 1. Center line is?  
(c) Chain thin line
2. Use of center line is?  
(d) To represent axis
3. What is purpose of technical Drawing?  
(d) to make one intended meaning drawing
4. What is purpose of artistic drawing?  
(c) To make subjectively interpreted drawing
5. Size of A3 sheet?  
(d) 297 X 420mm
6. In first angle front view is drawn  
(b) Above the XY line
7. Technical drawing tools are used to draw  
(d) All of above
8. Use of reference grids in technical drawing?  
(c) To Show position of object
9. Which pencil grade is hardest  
(b) 9H
10. H pencil is use to draw?  
(d) None of the above
11. Orthographic projection represents three dimensional objects in?  
(b) Two dimension
12. In orthographic projection, the projection lines are \_\_\_\_\_ to the projection plane?



(b) Orthogonal

13. The point, from which the observer is assumed to view the object, is called?

(a) Center of projection

14. In orthographic projection, the object is placed with one of its faces \_\_\_ to the picture plane?

(c) Parallel

15. The two ways of drawing orthographic projection are?

(a) First angle, second angle

16. Orthographic projection is also known as?

(c) Multi view projection

17. In third angle projection method, the object is supposed to be in

(c) Third quadrant

18. 8. Projection line is?

(b) Continuous thin line

19. Visible outline or edge is?

(a) Continuous thick line

20. The orthographic projection, projection lines are \_\_\_\_ to each other.

(a) Parallel

**Section – B**

06X05 = 30 Marks

(Attempt any 06 questions out of 08 questions)

21. What are factors which effect tolerance?

Answer:

factors which effect tolerance:

- Improperly adjusted machines
- Operator error
- Tool wear
- Defective raw materials etc.

22. Write the difference between first angle and third angle views?

First angle projection	Third-angle projection
Object is kept in the first quadrant.	Object is assumed to be kept in the third quadrant.
Object lies between observer and the plane of projection.	Plane of projection lies between the observer and the object.
The plane of projection is assumed to be non-transparent.	The plane of projection is assumed to be transparent.
Front (elevation) view is drawn above the XY line	Front (elevation) view is drawn below the XY line
Top (plan) view is drawn below the XY line	Top (plan) view is drawn above the XY line
Left view is projected on the right plane and vice versa	Left view is projected on the left plane itself.
Followed in India, European countries	Followed in USA

23. What are different types of errors which make measuring inaccurate

Answer:

- Parallax Error
- Tilt Error
- Cocking Error
- Dirt and burrs on work piece
- Dirt and burrs on Measurement

24. Write a short note on set square

Set squares are used to draw lines with an angle between them. In most of the structures, 30, 45, 60 and 90-degree lines are most common. Generally, set squares are of two types: One is 45 degrees set square and another is 30 – 60 degree set square. Both are required in the drawing. 45 set square has a side of 25 cm while 30-60 set square has 25 cm length on one side.

25. Write a short note on the technical drawing.

Answer:

It is a system of graphic representation of various types of objects or structures. Its purpose is to provide sufficient information to facilitate its design, construction, and maintenance. It is usually done today with the help of computerized media.

This type of drawing is based on descriptive geometry and uses orthogonal projections to draw the different views of an object, plane, part, machine and others.

26. What are different types of lines used to make technical drawing.

Answer:

- Continuous Thick Line: Surroundings and sides of the matters ( Outlines of the Edges), End of the Screws,



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- Continuous Thin line: Measure lines, Backside section lines, Implied axis lines, to state the code of the planes, at diagonal lines which are used to state plane surface, Intersection, Leader, Hatching.
- Dashed Thin Lines: Invisible/Hidden Lines represents an invisible edges on the on an objects.
- Dashed Thick Lines with Dots: To state the special places/surfaces which will processed additionally like to coat, to harden etc.
- Dashed Thin Lines with Dots: Axis lines of symmetrical drawings, In front of section planes.
- Chain Thin with Thick Ends: Cutting Plane, To draw the trace at section planes,
- Continuous Thin Zigzag Line: It is used when free hand lines are drawn by tools
- Free Hand Line: Limits of partial and interrupted views and sections

27. Write a short note on compound and geometric tolerance.

- Compound Tolerance:

When tolerance of one dimension is dependent upon tolerance of other factors. For example tolerance for the dimension R is determined by the combined effects of tolerance on 40 mm dimension, on 60 $\phi$ , and on 20 mm dimension.

- Geometric Tolerance:

Geometric dimensioning and tolerancing (GD&T) is a method of defining parts based on how they function, using standard symbols.

28. Write a short note on drawing templates and french curves.

- French Curves

French curves are made of plastic and they are in irregular shapes. Sometimes the drawing requires irregular curves or shapes or arcs which cannot be drawn using compass. In that case French curves are suitable. Generally French curves are more suitable for small curves and for long curves splines are used.

- Drawing Templates

Templates are nothing but plastic or wooden boards which contains spaces of several shapes or letters. Non-dimensional shapes or variety font letters are drawn by using templates which makes drawing easier and perfect.

### Section – C

05X10 = 50 Marks

29. Write a short note on micrometer.

As we know the micrometer has wide application in all fields of science during different scientific experiments and in engineering to measure the values of finest objects up to higher precision and accuracy so for better understanding and to ensure the appropriate use

of micrometer, firstly we must have to know its mechanism and basic parts, construction and main function.

Parts of Micrometer:

- (1) Zero adjust screw
- (2) Anvil
- (3) Spindle
- (4) Anvil Face and Spindle Face
- (5) micrometer screw gauge Construction
- (6) Lock nut
- (7) Sleeve
- (8) Thimble
- (9) Ratchet
- (10) C-Frame

30. What is tolerance? What are types are tolerance?

Classification of Tolerance:

- Unilateral tolerance

When the tolerance distribution is only on one side of the basic size. Either positive or negative, but not both.

Below zero line: Negative

Above zero line: Positive

- Bilateral tolerance: When the tolerance distribution lies on either side of the basic size.

It is not necessary that the Zero line will divide the tolerance zone equally on both sides.

It may be equal or unequal

- Compound tolerance

Tolerance for the dimension R is determined by the combined effects of tolerance on 40 mm dimension, on 60, and on 20 mm dimension.

- Geometric Tolerance

Geometric dimensioning and tolerancing (GD&T) is a method of defining parts based on how they function, using standard symbols.

31. Write a short note on first angle projection and third angle projection?

- First Angle Projection:

In the first angle projection, the object is placed in the 1st quadrant. The object is positioned at the front of a vertical plane and top of the horizontal plane. First angle projection is widely used in India and European countries. The object is placed between the observer and projection planes. The plane of projection is taken solid in 1st angle projection.

- Third Angle Projection:

In the third angle projection, the object is placed in the third quadrant. The object is placed behind the vertical planes and bottom of the horizontal plane. Third angle projection is widely

used in the United States. The projection planes come between the object and observer.

The plane of projection is taken as transparent in 3rd angle projection.

32. Write a short note on vernier caliper.

Parts of Vernier Caliper:

- Lower Jaws
- Upper Jaws
- Depth Rod
- Main Scale
- Vernier Scale

- Thumb Screw: The thumb screw is located at the bottom of the vernier scale. Its purpose is to provide a grip for the user to slide the jaws easily and adjust the position of the jaws and depth rod while maintaining a firm grip on the object.

- Lock Screw: The lock screw is used to fix the position of the jaws once the object is positioned properly so that readings can be taken without the fear of spoiling the position.

33. What is fit? Explain its types with neat sketches.

Answer

Fit:

The degree of tightness and or looseness between the two mating parts. Three basic types of fits can be identified, depending on the actual limits of the hole or shaft.

1. Clearance fit: Upper limit of shaft is less than the lower limit of the hole. The largest permissible dia. of the shaft is smaller than the dia. of the smallest hole. E.g.: Shaft rotating in a bush.

2. Interference fit: - Upper limit of the hole is less than the lower limit of shaft. No gap between the faces and intersecting of material will occur. Shaft need additional force to fit into the hole.

3. Transition fit: - Dia. of the largest permissible hole is greater than the dia. of the smallest shaft. Neither loose nor tight like clearance fit and interference fit. Tolerance zones of the shaft and the hole will be overlapped between the interference and clearance fits.

**School of Entrepreneurship Skills**  
**Session: 2020-21 (Summer Semester)**  
**B. Voc. Program, 5<sup>th</sup> Semester,**  
**Make-up Examination**

**Course Code: SES1503**

**Time: 3 Hours**

**Course Name: Legal and Taxation Aspects of Business**

**Max. Marks: 100**

**Section – A**

20X01 = 20 Marks

Attempt all 20 objective type questions, each question carries 01 mark.

Q1. By which act does the government check restrictive trade?

- (a) Competition Act (b) FEMA  
(c) Industrial Policy Act 1991 (d) None of above

Q2. A company is formed by

- (a) Directors (b) Promoters (c) Government (d) Owners

Q3. The minimum members in private limited company are:

- (a) 7 (b) 4 (c) 3 (d) 2

Q4. The company is managed by the group of persons known as:

- (a) Board of Directors (b) Promoters  
(c) Team of shareholders (d) None of above

Q5. The codified law for the law of Contract in India is

- (a) Indian Contract Act, 1872 (b) Indian Contract Act, 1972  
(c) Indian Contract Act, 2019 (d) Indian Contract Act, 1372

Q6. The acceptance of a proposal should be

- (a) Expressly given (b) Impliedly given (c) Given by consent (d) All of above

Q7. Consumer Protection Act is significant to

- (a) Immovable Goods (b) Particular Goods and Services  
(c) Movable Goods (d) All Goods and Services

Q8. Within how many days the opposite party has to answer after they are informed about the complaint?

- (a) 30 (b) 20 (c) 25 (d) 35

Q9. Every company needs a set of rules and regulations to manage its internal affairs. It is recorded in:

- a) Memorandum of Association (b) Articles of Association  
c) Deed (d) Company Assets

Q10. A company is

- (a) Natural Person (b) Artificial Person  
(c) Limited person (d) Unlimited Person

Q11. The minimum members in public limited company are:

- (a) 7 (b) 4 (c) 3 (d) 2

Q12. When consent to an agreement is caused by coercion, fraud or misrepresentation, the agreement is a contract ----- whose consent was so caused.

- (a) Valid (b) Voidable at the option of aggrieved party  
(c) Void (d) Legal

Q13. The Charter of the Company is known as

- (a) Articles of Association (b) Memorandum of Association  
(c) Charter (d) Deed



- Q14. Consideration is  
(a) something in return (b) something of value  
(c) something invaluable (d) doing something voluntarily
- Q15. Coercion involves  
(a) use of physical pressure (b) threat of use of physical pressure  
(c) a threat (d) All of above
- Q16. Undue influence involves  
(a) use of physical pressure  
(b) use of position to obtain an unfair advantage over the other  
(c) none of these  
(d) a threat.
- Q17. A person appointed to contract on behalf of another person, is known as:  
(a) Principal (b) Agent (c) Servant (d) Contractor
- Q18. In which forum it is compulsory to have a female member  
(a) National commission (b) State commission  
(c) District commission (d) All of the above
- Q19. The maximum age national commission member should be  
(a) 60 (b) 35 (c) 70 (d) 50
- Q20. An offer may lapse by  
(a) Revocation (b) Counter Offer  
(c) Rejection of offer by offeree (d) All of these

**Section – B**

06X05 = 30 Marks

06 long answer type questions, each question carries 05 marks.

(Attempt any 06 questions out of 08 questions)

- Q1. What do you mean by Articles of Association.
- Q2. Write a brief about GST.
- Q3. Write a brief about direct taxes in India.
- Q4. What are the main objectives of Competition Act in India.
- Q5. What are the main objectives of Consumer Protection Act 2019 in India.
- Q6. Define Consumer under Consumer Protection Act 2019.
- Q7. Write in brief about right to safety under Consumer Protection Act.
- Q8. What are Quasi Contacts. Give examples.

**Section – C**

05X10 = 50 Marks

Attempt all 05 essay type questions, each question carries 10 marks.

- Q.1. What make a contract valid under Indian Contract Act?
- Q.2. Explain any three special rights of a consumer under Consumer Protection Act 2019.
- Q.3. Why GST was implemented in India?
- Q.4. Write a note on Limited Liability Partnership Act, 2008.
- Q.5. What is the difference between direct and indirect taxes in India.



School of Entrepreneurship Skills  
Session: 2020-21 (Summer Semester)  
B. Voc. Program, 5<sup>th</sup> Semester,  
End-Sem. Examination

*Answer key*

Course Code: SES1503

Time: 3 Hours

Course Name: Legal and Taxation Aspects of Business

Max. Marks: 100

Section – A

20X01 = 20 Marks

Attempt all 20 objective type questions, each question carries 01 mark.

- Q1. By which act does the government check restrictive trade?  
(a) **Competition Act** (b) FEMA  
(c) Industrial Policy Act 1991 (d) None of above
- Q2. A company is formed by  
(a) Directors (b) **Promoters** (c) Government (d) Owners
- Q3. The minimum members in private limited company are:  
(a) 7 (b) 4 (c) 3 (d) **2**
- Q4. The company is managed by the group of persons known as:  
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(c) Team of shareholders (d) None of above
- Q5. The codified law for the law of Contract in India is  
(a) **Indian Contract Act, 1872** (b) Indian Contract Act, 1972  
(c) Indian Contract Act, 2019 (d) Indian Contract Act, 1372
- Q6. The acceptance of a proposal should be  
(a) Expressly given (b) Impliedly given (c) Given by consent (d) **All of above**
- Q7. Consumer Protection Act is significant to  
(a) Immovable Goods  
(b) Particular Goods and Services  
(c) Movable Goods  
(d) **All Goods and Services**
- Q8. Within how many days the opposite party has to answer after they are informed about the complaint?  
(a) **30** (b) 20 (c) 25 (d) 35
- Q9. Every company needs a set of rules and regulations to manage its internal affairs. It is recorded in:  
(a) Memorandum of Association (b) **Articles of Association**  
(c) Deed (d) Company Assets
- Q10. A company is  
(a) Natural Person (b) **Artificial Person**  
(c) Limited person (d) Unlimited Person
- Q11. The minimum members in public limited company are:  
(a) **7** (b) 4 (c) 3 (d) 2



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- Q12. When consent to an agreement is caused by coercion, fraud or misrepresentation, the agreement is a contract ----- whose consent was so caused.
- (a) Valid (b) **Voidable at the option of aggrieved party**  
(c) Void (d) Legal
- Q13. The Charter of the Company is known as
- (a) Articles of Association (b) **Memorandum of Association**  
(c) Charter (d) Deed
- Q14. Consideration is
- (a) **something in return** (b) something of value  
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(b) **use of position to obtain an unfair advantage over the other**  
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- (a) Principal (b) **Agent** (c) Servant (d) Contractor
- Q18. In which forum it is compulsory to have a female member
- (a) National commission (b) State commission  
(c) District commission (d) **All of the above**
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- (a) 60 (b) 35 (c) **70** (d) 50
- Q20. An offer may lapse by
- (a) Revocation (b) Counter Offer  
(c) Rejection of offer by offeree (d) **All of these**

### Section – B

06X05 = 30 Marks

06 long answer type questions, each question carries 05 marks.

(Attempt any 06 questions out of 08 questions)

Q1. What do you mean by Articles of Association.

Ans. Articles of association form a document that specifies the regulations for a company's operations and defines the company's purpose. The document lays out how tasks are to be accomplished within the organization, including the process for appointing directors and the handling of financial records.

Articles of association can be thought of as a user's manual for a company, defining its purpose and outlining the methodology for accomplishing necessary day-to-day tasks.

The content and terms of the "articles" may vary by jurisdiction, but typically include provisions on the company name, its purpose, the share structure, the company's



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organization, and provisions concerning shareholder meetings. Articles of association are often referred to as "articles" for short.

Articles of Association has to be carefully drafted at the time of Company Registration considering the The provisions of the articles are binding on the members as well as the company. The AOA should always be in harmony with the MOA of the company, meaning which the Articles cannot prescribe rules, which is beyond the powers mentioned in the Memorandum.

Articles of Association generally prescribes the relation between shareholders and Board of Directors, relation among shareholders and Directors themselves.

It usually contains regulation relating to Share capital and Variation rights, Lien, Calls on Shares, Transfer and Transmission of shares etc. The company may also prescribe additional matters necessary for the management of the company in its AOA.

Q2. Write a brief about GST.

Ans. Goods and Services Tax (GST) is an indirect tax (or consumption tax) used in India on the supply of goods and services. It is a comprehensive, multistage, destination-based tax: comprehensive because it has subsumed almost all the indirect taxes except a few state taxes. Multi-staged as it is, the GST is imposed at every step in the production process, but is meant to be refunded to all parties in the various stages of production other than the final consumer and as a destination-based tax, it is collected from point of consumption and not point of origin like previous taxes.

Goods and services are divided into five different tax slabs for collection of tax - 0%, 5%, 12%, 18% and 28%. However, petroleum products, alcoholic drinks, and electricity are not taxed under GST and instead are taxed separately by the individual state governments, as per the previous tax system.

The tax came into effect from 1 July 2017 through the implementation of the One Hundred and First Amendment of the Constitution of India by the Indian government. The GST replaced existing multiple taxes levied by the central and state governments.

The tax rates, rules and regulations are governed by the GST Council which consists of the finance ministers of the central government and all the states. The GST is meant to replace a slew of indirect taxes with a federated tax and is therefore expected to reshape the country's 2.4 trillion dollar economy, but its implementation has received criticism.. Positive outcomes of the GST includes the travel time in interstate movement, which dropped by 20%, because of disbanding of interstate check posts.

Q3. Write a brief about direct taxes in India.

Ans. Direct taxes, usually levied on a person's income are paid directly by taxpayers or an organization to tax authorities of the Government of India. The person or the organization in question cannot transfer this type of tax to another person or entity for payment. Some of the examples of direct tax include income tax and corporate tax.

Types of Direct Taxes in India



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The various types of direct taxes levied on citizens by the Government Of India are as follows:

### 1) Corporate Tax

Under the Indian Income Tax Act, 1961, both Indian as well as foreign organizations are liable to pay taxes to the government. The corporate tax is levied on the net profit of domestic firms. Also, foreign corporations whose profits appear or are deemed to emerge through their operations in India are also liable to pay taxes to the Government of India. The income of a company, be it in the form of dividends, interest and royalties, is also taxable.

Minimum Alternative Tax (MAT):

Fringe Benefits Tax (FBT): The FBT tax is imposed on the fringe benefits like drivers and maids provided/paid for by companies to their employees.

Dividend Distribution Tax (DDT): An amount that is declared, distributed or paid as dividend to the shareholders by a domestic company is taxed under the Dividend Distribution Tax. It is applicable to domestic companies only. Foreign companies distributing dividends in India do not pay this tax (such dividends are taxable in the hands of the shareholder).

Securities Transaction Tax (STT): The SST is imposed on the income which the companies get through taxable securities transactions. This tax is free of any surcharge.

### 2) Income Tax

Income tax is perhaps the most well known direct tax imposed by the government on annual income generated by businesses and individuals. The income tax on income generated by the business houses is known as Corporate Tax. Income tax is calculated as per the provisions of Income Tax Act, 1961 and is directly paid to the central government on an annual basis. The income tax rate depends on the net taxable income or the tax bracket. Income tax may be deducted in the form of TDS (tax deducted at source) in case of salaried employees. However, in case of self-employed individuals, the tax is payable on the basis of declared income as per their Income Tax Return submission. ITR is basically a statement of income and the tax liability (on the basis of income declared) which is submitted to the Income Tax Department in the prescribed format.

Q4. What are the main objectives of Competition Act in India.

Ans 4. Competition is the act of the sellers individually seeking to acquire the patronage of buyers in order to achieve profits or market share. The Competition Act, 2002 was enacted by the Parliament of India and replaced The Monopolies and Restrictive Trade Practices Act, 1969. It is in effect to govern Indian competition law. After its enactment The Competition Act, 2002 has been amended twice, The Competition (Amendment) Act, 2007 and The Competition (Amendment) Act, 2009. Two of the main features of the Competition Act, 2002 is the framework it provides for the establishment of the Competition Commission, and the tools it provides to prevent anti-competitive practices and to promote positive competition in the Indian market.

Objectives of the Act

The Act seeks to provide the legal framework and tools to ensure competition policies are met and to prevent anti-competition practices and provide for the

penalisation of such acts. The Act protects the free and fair competition which protects the freedom of trade, which in turn protects the interest of the consumer. The Act seeks to prevent monopolies and also to prevent unnecessary intervention by the government. The main objectives of the Competition Act, 2002 are:

- to provide the framework for the establishment of the Competition Commission
- to prevent monopolies and to promote competition in the market
- to protect the freedom of trade for the participating individuals and entities in the market
- to protect the interest of the consumer

Q5. What are the main objectives of Consumer Protection Act 2019 in India.

Ans. The new Consumer Protection Act, 2019 came into force on 20th July 2020 and it will empower consumers and help them in protecting their rights through its various notified rules and provisions.

The new act will be swift and less time consuming compared to the older Consumer Protection Act, 1986 in which single-point access to justice was given making it a time-consuming exercise.

The old act provided for a three-tier consumer dispute redressal machinery at the National (National Consumer Disputes Redressal Commission), State and District levels.

#### Key Points

- The Consumer Protection Act, 2019 establishes the Central Consumer Protection Authority (CCPA) whose primary objective will be to promote, protect and enforce the rights of consumers.

It is empowered to:

- Conduct investigations into violations of consumer rights and institute complaints/prosecution.
- Order recall of unsafe goods and services.
- Order discontinuance of unfair trade practices and misleading advertisements.
- Impose penalties on manufacturers/endorsers/publishers of misleading advertisements.

Q6. Define Consumer under Consumer Protection Act 2019.

Ans. The Consumer Protection Act, 2019 (the Act) received the President's assent on 9 August 2019 which has replaced the Consumer Protection Act, 1986. The Act aims at protecting and strengthening the rights of the consumers by establishing authorities, imposing strict liabilities and penalties on product manufacturers, electronic service providers, misleading advertisers, and by providing additional settlement of consumer disputes through mediation.

#### Highlights of the Act

Under the new Act, "consumer" is defined as a person who "buys any goods" and "hires or avails of any service" for consideration but does not include a person who obtains goods for resale or goods or service for any commercial purpose. The Act seeks to widen the scope of this definition. Thus, a consumer will now mean any person who "buys any goods" and "hires any services" which shall include both online and offline transactions through electronic means, teleshopping, direct selling or multi-level marketing.



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The concept of "product liability" has been newly introduced and is defined as the responsibility of a product manufacturer or product seller of any product or service to compensate for any harm caused to a consumer due to defective product manufactured, sold or deficiency in services relating thereto.

Rights of the consumer

- be protected against the marketing of goods, products or services which are hazardous to life and property;
- be informed about the quality, quantity, potency, purity, standard and price of goods, products or services;
- be assured, wherever possible, access to a variety of goods, products or services at competitive prices;
- be heard and to be assured that consumers' interests will receive due consideration at appropriate fora;
- seek redressal against unfair trade practice or restrictive trade practices or unscrupulous exploitation of consumers; and consumer awareness

Q7. Write in brief about right to safety under Consumer Protection Act.

Ans. Means right to be protected against the marketing of goods and services, which are hazardous to life and property. The purchased goods and services availed of should not only meet their immediate needs, but also fulfil long term interests.

Before purchasing, consumers should insist on the quality of the products as well as on the guarantee of the products and services. They should preferably purchase quality marked products such as ISI, AGMARK, etc.

According to the Consumer Protection Act 1986, the consumer right is referred to as 'right to be protected against marketing of goods and services which are hazardous to life and property'. It is applicable to specific areas like healthcare, pharmaceuticals and food processing, this right is spread across the domain having a serious effect on the health of the consumers or their well being viz. Automobiles, Housing, Domestic Appliances, Travel etc. When there is violation of the right then there occur medical malpractice lawsuits in the country. It is estimated every year that thousands or millions of citizens of India are killed or seriously injured by immoral practices by doctors, hospitals, pharmacies and the automobile industry. Still the government of India, known for its callousness, does not succeed in acknowledging this fact or making a feeble effort for maintaining statistics of the mishaps. The Government of India needs to have world class product testing facilities to test drugs, food, cars or any other consumable product that can prove to be a menace to life. It does not happen coincidentally that Tata Nano is sold in India for half of what it costs in a country which is industrially developed, this is a classic case of requirement of a cheap product that outweighs the need for safety of family and self. The developed countries like the United States have stalwart agencies which oversee the protection of consumer products, the Food and Drug Administration (FDA) for food and drugs, the National Highway Traffic Safety Administration (NHTSA) for automobiles and the Consumer Product Safety Commission (CPSC) for various other consumer products etc. This right needs each product which can potentially be a danger to our lives to



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be marketed after adequate and complete verification as well as validation. India is 50 years away, for empowering this right adequately and completely

Q8. What are Quasi Contracts. Give examples.

Ans. The word 'Quasi' means pseudo. Hence, a Quasi contract is a pseudo-contract. When we talk about a valid contract we expect it to have certain elements like offer and acceptance, consideration, the capacity to contract, and free will. But there are other types of contracts as well.

There are cases where the law implies a promise and imposes obligations on one party while conferring rights to the other even when the basic elements of a contract are not present. These promises are not legal contracts, but the Court recognizes them as relations resembling a contract and enforces them like a contract.

These promises/ relations are Quasi contracts. These obligations can also arise due to different social relationships which we will look at in this article.

The core principles behind a Quasi Contract are justice, equity and good conscience. It is based on the maxim: "No man must grow rich out of another persons' loss."

Features of a Quasi Contract

It is usually a right to money and is generally (not always) to a liquated sum of money

The right is not an outcome of an agreement but is imposed by law.

The right is not available against everyone in the world but only against a specific person(s). Hence it resembles a contractual right.

Sections 68 – 72 of the Indian Contract Act, 1872 detail five circumstances under which a Quasi contract comes to exist. Remember, there is no real contract between the parties and the law imposes the contractual liability due to the peculiar circumstances.

Section 68 – Necessaries Supplied to Persons Incapable of Contracting

Imagine a person incapable of entering into a contract like a lunatic or a minor. If a person supplies necessaries suited to the condition in life of such a person, then he can get reimbursement from the property of the incapable person.

Section 69 – Payment by an Interested Person

If a person pays the money on someone else's behalf which the other person is bound by law to pay, then he is entitled to reimbursement by the other person.

Section 70 – Obligation of Person enjoying the benefits of a Non-Gratuitous Act

Imagine a person lawfully doing something or delivering something to someone without the intention of doing so gratuitously and the other person enjoying the benefits of the act done or goods delivered. In such a case, the other person is liable to pay compensation to the former for the act, or goods received. This compensation can be in money or the other person can, if possible, restore the thing done or delivered.

Section 71 – Responsibility of Finder of Goods

If a person finds goods that belong to someone else and takes them into his custody, then he has to adhere to the following responsibilities:

- Take care of the goods as a person of regular prudence
- No right to appropriate the goods



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● Restore the goods to the owner (if found)

Section 72 – Money paid by Mistake or Under Coercion

If a person receives money or goods by mistake or under coercion, then he is liable to repay or return it.

Similarly, money paid by coercion which includes oppression, extortion or any such means, is recoverable.

## Section – C

05X10 = 50 Marks

Attempt all 05 essay type questions, each question carries 10 marks.

Q.1. What make a contract valid under Indian Contract Act?

Ans. Essential Elements Of A Valid Contract

1. Two Parties: One cannot contract with himself. A contract involves at least two parties- one party making the offer and the other party accepting it. A contract may be made by natural persons and by other persons having legal existence e.g. companies, universities etc.

2. Parties must intend to create legal obligations: There must be an intention on the part of the parties to create legal relationship between them. Social or domestic type of agreements are not enforceable in court of law and hence they do not result into contracts.

3. Other Formalities to be complied with in certain cases: In case of certain contracts, the contracts must be in writing, e.g. Contract of Insurance is not valid except as a written contract.

4. Certainty of meaning: The agreement must be certain and not vague or indefinite

5. Possibility of performance of an agreement: The terms of agreement should be capable of performance. An agreement to do an act impossible in itself cannot be enforced.

6. Offer and Acceptance : An agreement is the first essential element of a valid contract.

According to Section 2(e) of the Indian Contract Act, 1872, "Every promise and every set of promises, forming consideration for each other, is an agreement" and according to Section 2(b) "A proposal when accepted, becomes a promise". An agreement is an outcome of offer and acceptance.

7. Free Consent: Two or more persons are said to consent when they agree upon the same thing in the same sense. This can also be understood as identity of minds in understanding the terms viz consensus ad idem. Further such a consent must be free. Consent would be considered as free consent if it is not caused by coercion, undue influence, fraud or, misrepresentation or mistake.

8. Capacity of Parties: Capacity to contract means the legal ability of a person to enter into a valid contract.

Section 11 of the Indian Contract Act specifies that every person is competent to contract who

(a) is of the age of majority according to the law to which he is subject and

(b) is of sound mind and

(c) is not otherwise disqualified from contracting by any law to which he is subject.

9. Lawful Consideration and Object: The consideration and object of the agreement must be lawful.

10. Not expressly declared to be void: The agreement entered into must not be which the law declares to be either illegal or void. An illegal agreement is an agreement expressly or impliedly prohibited by law. A void agreement is one without any legal effects.

Q.2. Explain any three special rights of a consumer under Consumer Protection Act 2019.

Ans. Six consumer rights have been defined in the Bill, including the right to: (i) be protected against marketing of goods and services which are hazardous to life and property; (ii) be informed of the quality, quantity, potency, purity, standard and price of goods or services; (iii) be assured of access to a variety of goods or services at competitive prices; and (iv) seek redressal against unfair or restrictive trade practices.

1) Right to Safety: A consumer has the right to safety against such goods and services as are hazardous to his health, life and property.

For example, spurious and substandard drugs; appliances made of low quality raw material, such as, electric press, pressure cooker, etc. and low quality food products like bread, milk, jam, butter, etc. The consumers have the right to safety against the loss caused by such products.

(2) Right to be Informed/Right to Representation: A consumer has also the right that he should be provided with all the information on the basis of which he decides to buy goods or services. Such information relate to quality, purity, potency, standard, date of manufacture, method of use, etc. of the commodity. Thus, a producer is required to provide all such information in a proper manner, so the consumer is not cheated.

(3) Right to Choose: A consumer has the absolute right to buy any goods or services of his choice from among the different goods or services available in the market. In other words, no seller can influence his choice in an unfair manner. If any seller does so, it will be deemed as interference in his right to choice.

Q.3. Why GST was implemented in India?

Ans. The Goods and Services Tax (GST) was rolled out on July 1, 2017, to simplify the existing tax regime, widen the tax base, and increase the government's tax revenues. It was implemented with a hope that it would eliminate the system of double taxation that was in place earlier. It is being estimated that there are almost 5 crore small and medium enterprises (SME) that are responsible to form the backbone of the Indian economy and contribute to 50 per cent of the industrial output and around 42 per cent of export earnings. SME had to adapt to the new tax regime. Considerable steps had to be taken by SMEs to become GST ready. SMEs were told that changing to the GST system would eventually prove beneficial. With a

GST system in place, tax evasion would become much harder and scrupulous businesses would be rewarded by tax credit inputs.

While not everything went according to plan, there is no doubt that ultimately the GST is suitable for SMEs. The impact of GST on different sectors of the economy has become a never-ending debate. It is difficult to comprehend and speculate, but it is known that it is a mixed bag of opportunities and challenges, especially for SMEs.

Few reasons why it is so are mentioned below.

- Fosters an Atmosphere of Trust
- Starting a Business Becomes Easier
- Businesses Pay Less Tax under GST
- More Businesses are Tax Exempt
- Easier Compliance

Q.4. Write a note on Limited Liability Partnership Act, 2008.

Ans. The Limited Liability Partnership Act, 2008 was enacted by the Parliament of India to introduce and legally sanction the concept of LLP in India. Unlike the general partnerships in India, LLP is a body corporate and legal entity separate from its partners, have Perpetual succession and any change in the partners of a LLP shall not affect the existence, rights or liabilities of the LLP.

The provisions of the Indian Partnership Act, 1932 (9 of 1932) shall not apply to a limited liability partnership.

- LLP is a corporate business vehicle that enables professional expertise and entrepreneurial initiative to combine and operate in flexible, innovative and efficient manner, as a hybrid of companies & partnerships providing benefits of limited liability while allowing its members the flexibility for organizing their internal structure as a partnership.
- LLP is a legal entity partnership act.
- Separate Legal Entity- Continue its existence irrespective of changes in partners,  
LLP itself can enter into contracts and hold properties
- Partners' Liability limited to the agreed contribution
- Professional & Non-professional (Businessmen), both can set up LLP.

Q.5. What is the difference between direct and indirect taxes in India.

Ans. Taxes are one of the biggest sources of income for the government. All the various taxations in India can be broadly classified into two categories- direct and indirect tax

A direct tax is a tax that you directly pay to the authority imposing the tax. For instance, income tax is imposed by the government, and you pay it directly to the government. These taxes cannot be transferred to any other entity or person. There are several acts which govern direct taxes.



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While direct taxes are imposed on income and profits, indirect taxes are levied on goods and services. A major difference between direct and indirect tax is the fact

that while direct tax is directly paid to the government, there is generally an intermediary for collecting indirect taxes from the end-consumer. It is then the responsibility of the intermediary to pass on the received tax to the government.

Context	Direct Tax	Indirect Tax
1. Imposed on	Income and profits	All the goods and services
2. Who pays	Individuals and businesses	End-consumers
3. How much	Depends on income and profits	Same for everyone
4. Transferability	Not transferable	Transferable
5. Tax Evasion	Possible	Not possible
6. Nature	Progressive	Regressive
7. Collections	Complex	Convenient
8. Common examples	Income tax and securities transaction tax	GST, excise duty, and VAT

