BHARATI VIDYAPEETH INSTITUTE OF TECHNOLOGY

QUESTION BANK Unit Test-I

Program: - Electrical Engineering | Program Code:- EE

Course Title: Emerging Trends in Electrical Engineering | Semester: - Sixth

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Unit - I Digitization beyond Automation (14M) (CO-I)

Identify which is not an element of IoT?

a. People.
b. Process.
c. Security.
d. Things.

Internet of things is natural extension of ----------

a. Smart Factory
b. Computer
c. SCADA
d. I3.0

Which of the following is first and most commonly used smart, interactive IoT device?

a. Smart Watch
b. ATM
c. Health Tracker
d. Video Game.

IOT is evolved from ---------- communication

a. B2B
b. M2B
c. M2H
d. M2M

---------- are smart devices that uses embedded processors, sensor and Communication hardware to collect and send data which is acquired from environment

a. Computers
b. Network
c. Things
d. Protocols

---------- is the physical device or software program that serves as the Connection point between the cloud and controllers

a. SCADA
b. PLC
c. Actuator
d. IOT Gateway

Sequence of devices in IoT architecture from bottom layer to top layer is
a. Sensosrs->things->IoTgateway->Edge IT-> Data Center/ Cloud
b. Things ->Sensosrs ->IoTgatway->Edge IT-> Data Center/ Cloud
c. Things ->Sensosrs -> Edge IT->IoTgatway-> Data Center/ Cloud
d. Data Center/ Cloud-> Edge IT ->IoTgatway->Sensosrs->Things

The role of internet technologies and IoT in the context of Industry 4.0
is_____.
a. They from the base to connect everyday items.
b. They from the base for environmental friendly products
c. They form among others base for corporate communication
d. IoT and internet have no role to play

---------- is the direct contact between two smart objects when they share
Information instantaneously without intermediaries
a. Device to device
b. Device to gateway
c. Gateway to data systems
d. Between data systems

Top layer in IOT architecture is
a. Sensors, connectivity and network layer
b. Application layer
c. Management Service
d. Gateway and network

Agriculture IoT stick is smart gadget work on principle of
a. Plug & sense
b. Plug and play
c. Plug and work
d. Plug and socket

Data speed in 4G is_____.
a. 10Mbps
b. 64Kbps
c. 2 Mbps
d. 2.4 Kbps
Electrical power and locomotives are the inventions of
a. First revolution
b. Second revolution
c. Third Revolution
d. Fourth revolution

Industrial revolution is
a. Significant change that affects a single industry only
b. New technologies and novel ways of perceiving the world that trigger
a profound change in economic and social structures
c. An event that happened in a previous century and doesn't
affect modern society
d. A series of technological advances that may or may not have a

profound effect on societies

Which series of events best describes the transformations of the first three industrial revolutions?
a. Mechanization of production; introduction of mass production; the digital revolution
b. Mechanization of production; invention of steamships and railroads; the digital revolution
c. Discovery of electricity; the growth of mass production; the digital revolution
d. Mechanization of production; the agrarian revolution; the digital revolution

IOT cloud application may have capability of
a. Only Machine learning
b. Only Performing analytics
c. Only Generating reports
d. All of the above

IoT, Cyber Physical Systems, AI and Machine learning is characterized by
a. First revolution
b. Second revolution
c. Third Revolution
d. Fourth revolution

Key impact of the Third Industrial Revolution is
a. Agrarian societies become more urban.
b. The world became less reliant on animals and humans for energy creation.
c. Mass production created more jobs for skilled workers.
d. Electronics and information technology began to automate production.

The following applications are included under smart lighting:
i.Smart bulbs
ii.Smart dimmers.
iii.Smart flash mount lighting.
a. Only i
b. Only ii
c. Only iii
d. i, ii and iii.

E-learning helps in:
i. Increases Effectiveness.
ii. Improves productivity
iii. Hands on advanced technological tools.
a. Only i
b. Only ii
c. Only iii

d. i, ii and iii.

The objective of industry 4.0 is
a. Increase efficiency
b. Reduce complexity
c. Enabled self-controlling
d. All above

SCADA is abbreviation of
a. Supervisory Control And Data Acquisition
b. Smart Control And Data Acquisition
c. Sensors Control And Data Acquired
d. Smart Control And Data Acquired

Data speed in 5G is_____.
a. 1Gbps
b. 64Kbps
c. 2 Mbps
d. 2.4 Kbps

_____devices are able to intervene the physical reality like switching of the light or adjust the temperature of room.
a. IoT Gateway
b. Cloud
c. Sensors
d. Actuators

_____ is the other way of referring to IoT devices.
a. Connected.
b. Smart
c. Both A and B
d. None of the above

IIoT means
a. Information Internet of things.
b. Industrial Internet of things.
c. Innovative Internet of things.
d. Itemized Internet of things.

Advance analytics and monitoring in IoT ecosystem is provided by
a. IoT Gateway
b. Cloud
c. Sensors
d. Actuators

_____is best described about industry 4.0.
a. Analytics
b. Speed
c. Smart factory

d. Prediction

CPS means
a. Central Power System
b. Central Physical System
c. Cyber Power System
d. Cyber Physical system

CMfg means
a. Cloud Manufacturing
b. Cloud Making Fix Gadgeting
c. Cloud Making Fix gateway
d. Cone Manufacturing

Following is the feature of IoT
a. Connectivity
b. Analyzing
c. Sensing
d. All of the above

AMR means
a. Automatic Meter Recycling
b. Automatic Monitoring Record
c. Automatic Monitoring Reading
d. Automatic Meter Reading

Following is the application of Industry 4.0
a. 3D Printing
b. Mobile Devices
c. Smart Sensors
d. All of the above

Electrical Energy is related to which industry revolution
a. Industry Revolution 1.0
b. Industry Revolution 2.0
c. Industry Revolution 3.0
d. Industry Revolution 4.0

Top First layer in IOT architecture is
a. Sensors Connectivity
b. Application Layer
c. Management Service
d. Network Layer

Who is the founder of Industry Revolution 4.0
a. Prof. Paul Dirac
b. Prof. Klaus Schwab
c. Prof. Richard Feynman
d. Prof. William Gilbert

The first revolution is about
a. Water and steam to mechanize production
b. Mass production Electronics & IT
c. Electric Power
d. Mass production

Before the industrial revolution all products were created by-

a. Factory
b. Hand
c. Slaves
d. Royalty

What was the industrial revolution?
a. Changes and advancements in religion
b. Changes and advancements in militarism
c. Changes and advancements in government
d. Changes and advancements the production of goods

The transformation of industry and economy in Britain, between the 1780s and 1850s is called as-

a. First Industrial revolution
b. First Agriculture revolution
c. First Technological revolution
d. First Communication revolution

Which is the current Industrial revolution?

a. Industry 1.0
b. Industry 2.0
c. Industry 3.0
d. Industry 4.0

An IoT network is a collection of _____ devices.

a. Signal
b. Machine to Machine
c. Interconnected
d. Network to Network

Which of the following is not an application of IoT?

a. Wearables
b. Smart Grid
c. Arduino
d. Smart City

Which of these is not a device used in IoT?

a. Server
b. Node
c. Gateway
d. Loop

An IoT that applies to all aspects of Smart Grid the ICT stands for _____

a) Information and Communication Technology

b) Internet and Communication Technology

c) Internet and Communication of Things

d) Information and Communication of Things

Unit – II Smart Grid (14 M) (CO-II)

Electric grid is a single entity with ….
a. Multiple generation plants and transmission network
b. Conventional generation plants and transmission network
c. Multiple generation plants and distribution network
d. Multiple generation plants, transmission and distribution network

Smart grid an electric grid that uses information and communication technology
a. To gather data and act on information
b. To gather data only
c. To gather the information only
d. To gather data and not to act on information

Objective of Smart grid is…
a. Smart utilization of all the available resources.
b. Best utilization of all the available resources
c. optimum utilization of all the available resources
d. all of the above

Function of the communication network in Smart grid is…..
a. Energy Generation
b. Control and connectivity
c. Applications
d. Optimum use of energy

Following are sub-domains of Grid domain of Smart Grid.
a. Generation domain only
b. Generation and transmission domain only
c. Generation , transmission and distribution domain only
d. Distribution and transmission domain only

Third stage in evolution of Smart Grid is….
a. Preliminary stage
b. Elementary stage
c. Evolutionary stage

d. Post evolutionary stage

Self-healing is the significant feature of ……
a. Conventional grid
b. Smart grid
c. Micro grid
d. Macrogrid

Which of the following plays crucial role in optimization of cost of energy?
a. Macro grid
b. Micro grid
c. Smart grid
d. Conventional grid

Challenge faced by Energy Storage System of smart grid is….
a. Complex design and network
b. Security
c. Consumer awareness
d. Stability of Power flow

ISGTF abbreviation stands for ….
a. India Smart Grid Task Force
b. International Scout And Guide Fellowship
c. International Smart Grid Task Force
d. India Standard Grid Task Force

Classification of micro grids is based on …
a. type of controlling apparatus
b. type of supply (AC/DC)
c. type of load
d. number of generating units

Distributed generation plays significant role in macro grid to improve
a. increasing the power demand on the grid
b. increasing the transmission line losses
c. increasing the reliability factor of supply
d. increasing the cost of power generation

Technologies for Distributed Generation includes
a. Micro- compressors
b. Micro –hydro turbines
c. Macro –hydro turbines
d. Macro- turbines

A key feature of a micro-grid is its ability……from the utility seamlessly during grid disturbance
a. not to separate and isolate itself
b. to separate and isolate itself
c. to separate but not to isolate itself
d. not to separate and isolate itself

_____is a stakeholders of smart grid.
a. Oil manufacturing companies
b. Utility companies
c. Motor manufacturing companies
d. Political Parties

A localized grouping of electricity generations, energy storages, and loads is termed as?
a. Macro grid
b. Micro grid
c. National grid
d. State grid

What is the full form of DR in the perspective of Smart Grids?
a. Divide and Rule
b. Demand and Response
c. Delivery Rate
d. Data Reduction

A micro-grid is designed for a _____usually for a certain community whiles the smart grid is designed for the _____electrical system.
a. small scale, whole
b. medium scale, whole
c. large scale ,whole
d. small scale, partial

India Smart Grid Task Force (ISGTF) recommended _____number of pilot projects in different distribution companies.
a. 20
b. 18
c. 14
d. 16

"Transform the Indian power sector into a secure, adaptive, sustainable and digitally enabled ecosystem that provides reliable and quality energy for all with active participation of stakeholders."
a. Micro Grid Vision for India
b. Smart Grid Vision for USA
c. Smart Grid Mission for India
d. Smart Grid Vision for India

Micro Grid can be operated said to be in islanded mode when……
a. it function synchronously
b. it functions autonomously.
c. it function asynchronously
d. it stops functioning

What is the role of Big Data in IoT's Smart Grid architecture?
a. Filter the data

b. Locked the data
c. Store data
d. None of the these

What is the real example of a smart grid device in IoT?
a. Mobile phone
b. Television
c. Smart Speaker
d. Smart Meters

What is the example for smart grid edge device for utility?
a) Smart Meters
b) Smart Home
c) Smart Car
d) Smart Collage

In smart grid PLM means –
a. Peak Load Management
b. Plant Load Management
c. Power Leakage Management
d. Plant Leakage Management

In smart grid OMS means –
a. Overall Maintenance System
b. Overall Management System
c. Outage Management System
d. Outage Maintenance System

Smart grid technologies are aimed at improvement of-
a. Only Power Transmission System
b. Only Power Distribution System
c. Both Power Transmission and Distribution Systems
d. Neither Power transmission nor Power Distribution System

Smart Meters used in Smart Grid –
a. Measure electricity usage in real time
b. Can send data to and from utilities and their consumers.
c. Allows utilities to give consumers more information about current electricity charges.
d. All of above

The main segments of micro grid are –
a. Phase A, Phase B, Phase C
b. Measurement, Logic and Control
c. Generation, Transmission and distribution.
d. Generation, Transmission, Distribution and Utilisation/Consumption.

The main types of sources in Micro grid are –
a. Only Renewables
b. Only diesel generators

c. Renewables and Diesel generators
d. Renewables, Diesel generators, Micro turbines, fuel cells

What is the need of energy management in Micro Grid?
a. To manage the renewable resources, storages and loads
b. To reduce the stress on grid during peak hours.
c. To obtain an energy balance in an islanded operation
d. All of above

Which is a building system that provides artificial light for indoor areas-
a. Lighting system
b. Building automation system
c. Closed loop control system
d. Direct Digital control system

Smart substation has to comply with which international standard?
a. IEC 245
b. IEC 23-67-80
c. IEC 61850
d. None of these

In a Smart or Digital Substation, what is used for measurement and protection?
a. CTs
b. PTs
c. CVTs
d. Fibre-optic sensors

A smart substation improves-
a. Power Quality
b. Reliability
c. Load Profile
d. All of above

What is the role of Cloud in smart grid architecture of IoT?
a) Store data
b) Manage data
c) Collect data
d) Security

Unit - III Smart City (Electrical Features) (14M) (CO-III)

Which of following is features of a smart city?
a) Preserving and developing open spaces
b) Promoting Rapid Transit system
c) Providing Online services
d) All of above

Retrofitting in smart city means _____
a) Increase area of city
b) Decrease area of city
c) Make existing area more efficient and livable
d) Increase infrastructure base

Electronic service delivery is _____ part of smart solutions.
a) E governance
b) Water management
c) Energy management
d) Urban mobility

Bhendi Bazar Project in Mumbai is an example of _____.
a) Retrofitting
b) Redevelopment
c) Greenfield development
d) Pan city development

Greenfield Development means
a) Implementing greenery in city
b) Implemented in city area
c) Implemented around city area
d) None of above

Smart metering is part of _____.
a) Water management
b)Energy management
c) A and B
d) None of above

Pan city development is related to provide smart solutions for ____
a) Existing infrastructure of city
b) New infrastructure of city
c) Outside of city
d) New city

Which of following is not included in Smart City Mission?
a) Mumbai
b) Nashik
c) Kolhapur
d) Aurangabad

Which of these can be used to remotely control security system in smart homes?

a. Smart Phone
b. Tablet
c. Computer
d. All of above

What is another term for Smart home?

a. Future Home
b. Home Automation
c. Sci-fi Home
d. Robotic Home

The core element of architecture of smart city is _____

a. Mobile Unified Service
b) Urban Application Platform
c) Management center
d) Integrated Information Provider

In a smart city concept, ITS stands for _____

a) Internet Travel Services
b) Internet Transportation Security
c) Intelligent Transportation Security
d) Intelligent Transportation Services

Which of following is/are objective/s of smart cities ?

(a) Smart Mobility
(b) Public Safety
(c) Smart Governance
(d) All of Above

A smart city improves _____.

(a) Quality of Life
(b) Health and Safety
(c) Social, Economic and cultural growth
(d) All of above

Which of following are tools of Smart Governance ?

(a) Digital Democracy
(b) Citizen Empowerment
(c) Open Governance
(d) All of above

Multimodal transport, road condition monitoring, etc. are included in which of following objective of Smart cities ?

(a)Smart Mobility
(b)Smart economy
(c)Smart life
(d)All of above

The term 'Smart City' is broadly used as an equivalent to _____.
(a) Intelligent City
(b) Telecity
(c) Teletopia
(d) All of above

Which amongst following state has maximum number of cities associated with "Smart Cities Mission"
(a)Gujarat
(b)Karnataka
(c)Rajasthan
(d)Bihar

what is full form of GIFT city ?
(a) Gujarat Interim Financial and Technical
(b) Greater Interim Financial and Tec
(c) Gujarat International Financial Tec
(d) None

Which city become overall winner of Indian Smart Cities Awards 2020 ?
(a) Indore
(b) Surat
(c) Indore and Surat
(d) None of above

What is a "Charge Point Operator" (CPO)?

(a) The company that owns the EV charging station

(b) The company that manufactures the charging station

(c) The company that manages, maintains, and operates the charging station

(d) The company that designs the charging station

What is Vehicle-to-Grid (V2G) technology?

(a) A technology that allows EVs to be charged from the grid
(b) A technology that allows EVs to discharge power back to the grid
(c) A technology that enables communication between the EV and the charging station
(d) A technology that improves the efficiency of EV charging

According to the Department of Energy, what percentage of EV charging happens at home?

a. 50%
b. 75%
c. 80%
d. 90%

What is a primary advantage of bio-energy for smart cities?

a) High cost
b) Complex setup
c) Renewable nature
d) Low efficiency

What is a common challenge for wind and solar power in smart grids?

a) High fuel costs
b) Unreliable, intermittent supply (wind doesn't always blow, sun isn't always shining)
c) Excessive greenhouse gas emissions
d) Very low initial setup cost

Sustainability means

(a) Building Green
(b) Planting trees
(c) Conducting any human activity such that Resources are not permanently depleted affecting the lives of f
(d) Improving Infrastructure