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NATIONAL INSTIUTTE OF TECHNOLOGY TIRUCHIRAPPALLI

HOLISTIC SPORTS EDUCATION.

END SEMESTER EXAMINATION 2023.

Subject : Holistic Sports Education

Subject code : HSOE

Date : 17.05.2023

Time : 9:30 am

Total Marks : 50

Duration : 3 Hours

Answer the following questions not more than 500 words ? **Questions 1-8 carries 5 marks each**

1. Define the ways to **build self confidence** through Physical activity with example ?

2. How does the personality identification the role of personality increase the productivity of a Team ?

3. How will you maximize the Team Cohesion and reduce social loafing ?

4. Explain the Types of leadership ?

5. Elaborate the Principles of Goal settings ?

6. *Explain 6 pillars of Character Development through Physical Activity ?*

7. Explain the steps to stop smoking or any addictive substances ? How do exercise plays a major role as on effective method to achieve addiction free life ?

8. Explicate the role of Physical Activity to achieve a quality of life ?

9. Design a work out plan for weight loss. Also define BMR , Daily Protein requirement , training objective and Target weight. **(10 marks)**

Details of the Trainee as follows

- Training experience : NIL
- Current weight : 100 kg
- Life style : Sedimentary life style .
- Weight category : Obese.

Height = 180 cm
Age = 22 years.

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National Institute of Technology Tiruchirapalli

CSPE83-Internet of Things- Principles and Practices
January 2023
Department of CSE
End Semester Exam

Date: 08-05-2023

Marks:80

Answer all questions

Question No.		Questions	COs involved	Marks
1.	(a)	Give examples of high mobility and high throughput sensors?	CO1	1
	(b)	What is the role of things and Internet in IoT?	CO1	1
	(c)	What is the role of a NETCONF server?	CO4	1
	(d)	What is the difference between a Xively data stream and channel?	CO1, CO4	1
	(e)	How is Raspberry Pi different from a desktop computer?	CO3	1
	(f)	Give a real-life example of IBM Watson platform implementation?	CO5	1
	(g)	What does a MapReduce job comprise of?	CO4	1
	(h)	What are the devices used in Demilitarized Zone of CPwE Reference model?	CO5	1
	(i)	What is the use of I2C interfaces on Raspberry Pi?	CO3	1
	(j)	What protocols does the SkyNet messaging platform support?	CO2, CO4	1
2.	(a)	Describe the architecture of Django application?	CO2, CO4	2
	(b)	Describe an example of IoT service that uses publisher-subscriber communication model?	CO1, CO5	2
	(c)	Determine various communication models that can be used for weather monitoring system? Which is more appropriate model for the same?	CO5	2
	(d)	Why is network wide configuration important in IoT systems with multiple nodes?	CO4	2
	(e)	Differentiate IT and OT with real-life example?	CO1	2
	(f)	What is the use of GPIO pins?	CO3	2
	(g)	What is Amazon DynamoDB? Describe an application that can benefit from Amazon DynamoDB?	CO2, CO4	2
	(h)	What is the difference between a python module and a package?	CO3	2
	(i)	Determine the types of data generated by a forest fire detection system? What type of analysis is required for forest fire detection from the data collected	CO5	2
	(j)	Describe the roles of YANG and API modules in device management?	CO4	2
3.	(a)	Define constrained node networks, and their classes? Which communication protocol is best suited for constrained node networks? Explain the topology and security perimeters for that protocol?	CO1, CO2	5
	(b)	Differentiate sensors and actuators with suitable examples? Compare their functionalities with humans? Also state the different categories of sensors and actuators with examples?	CO1	5

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(c)	Why COAP protocol is used? Explain its message format and types of messages?	CO2	5
(d)	Explain RPL for lossy network with examples and draw DAG for the same example?	CO2	5
(e)	Explain FNF and its components with examples? Also state the key advantages of FNF?	CO4	5
(f)	Describe the 11 layers of Grid Block Reference Model? State the benefits of the architecture?	CO5	5
4. (a)	Design an air quality monitoring system using python code and IoT application services? (architecture, circuit diagram, code, output)	CO5	10
(b)	Consider the following requirements of a single-structured robot manufacturing plant; apply CPwE reference model and design the plant with automation and security with suitable diagram: Requirements: (1) The plant is manufacturing different body parts of a robot in a single zone (2) The plant is having robot controllers imported from another plant (3) The plant needs to arrange and make the robot functional in a different zone from the manufacturing zone (4) Finally, the selling price of the robots need to be fixed after discussion with multiple enterprises.	CO5	10

Converged Plantwise Ethernet model.

**********All the best**********