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Name of the College (Please tick, symbol is given)	:	COES	✓	CMES		COLS	
Program/Course	:	B. Tech. / FSE					
Semester	:	VIII					
Name of the Subject	:	Human Factors Engineering					
Subject Code	:	FSEG441					
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**UNIVERSITY OF PETROLEUM
AND ENERGY STUDIES**



End Semester Examination, April, 2017

Program/course: B. Tech. FSE
Subject: Human Factors Engineering
Code : FSEG441
No. of page/s: 2

Semester : VIII
Max. Marks : 100
Duration : 3 Hrs

Section I

Answer the following

10*2 =20 marks

1. Anthropometry is _____ (Define it).
2. Expand HEART.
3. Raynaud's Syndrome is a problem related with _____ part of body.
4. Expand CTS.
5. Define Aerobic and Anaerobic works.
6. Classification of workload (very light/ light/ moderate/ etc.) is based on _____.
7. Define Critical Flicker Fusion Frequency.
8. Risk perception ratio = Real Risk/ Apparent Risk (True/ False).
9. Machines are better at complex decision making/ inference (True/ False).
10. Define analog display.

Section II

Answer the following

4*10 = 40 marks

11. Define Human Machine System. Explain sensory function of human as a part of Human Machine System. [2+8]
12. Define Human Error. List out and Brief types of Human Errors that may occur in information processing stage along with primary error types. [2+8]
13. Write a short note on Allocation of functions for human and machines.

14. A. Postulate the Personal and Job risk factors associated with manual material handling.

Or

B. Discuss in short about NIOSH Lifting Equation- the constituents, applications and limitation.

Section III

Answer any two of the following

2*20 = 40 marks

15. Define Personnel Protective Equipment. Discuss in detail about head, eye and upper trunk protection – Function, Types, Specifications, Applications and Limitation. [2+6+3+5+2+2]
16. List out and explain conflicting situations that may cause eustress/distress to employee. Also explain the various possible ways in which an employee reaction would be negative to such situations. [2+ 8+10]
17. Answer the following
 - a. List various human error assessment techniques. [4]
 - b. Brief the techniques of mental fatigue measurement. [8]
 - c. Define CTDs. Explain any two CTDs in terms of causes and consequences, associated health risks. [2+6]

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Section I

Answer the following

10*2 =20 marks

1. Anthropometry is _____ (Define it).
2. Expand CTS.
3. Raynauld's Syndrome is a problem related with _____ part of body.
4. Tennis elbow is the problem related with _____ part of the body.
5. Define Static and Dynamic works.
6. Risk Perception Ratio = _____.
7. Define Critical Flicker Fusion Frequency.
8. The reaction time of average healthy human being is _____.
9. Machines are better at complex decision making/ inference (True/ False).
10. Define Digital display.

Section II

Answer the following

4*10 = 40 marks

11. List and Brief various modes of man, machine interactions and also postulate basic senses of human being that are being utilized in achieving a task. [2+3+5]
12. Define Human Error. Incase of two wheeler driving stage wise list out various kinds of human errors that could happened [2+8]
13. Different between Audio and Visual Displays.
14. A. Postulate the Personal and Job risk factors associated with manual material handling.

Or

B. Discuss in short about NIOSH Lifting Equation- the constituents, applications and limitation.

Section III

Answer any two of the following

2*20 = 40 marks

15. List characteristics of an ideal PPE. Discuss in detail about auditory, eye and leg protections – Function, Types, Specifications, Applications and Limitation. [3+5+3+5+2+2]
16. List out and explain conflicting situations that may cause eustress/distress to employee. Also explain the various possible ways in which an employee reaction would be negative to such situations. [2+ 8+10]
17. Prepare a checklist for the following activities in construction site:
 - a. Manual handling of construction materials. [10]
 - b. Usage of cranes and other construction equipment. [10]