

ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD
(Department of Science Education)

WARNING

1. **PLAGIARISM OR HIRING OF GHOST WRITER(S) FOR SOLVING THE ASSIGNMENT(S) WILL DEBAR THE STUDENT FROM AWARD OF DEGREE/CERTIFICATE, IF FOUND AT ANY STAGE.**
2. **SUBMITTING ASSIGNMENTS BORROWED OR STOLEN FROM OTHER(S) AS ONE'S OWN WILL BE PENALIZED AS DEFINED IN "AIOU PLAGIARISM POLICY".**
3. **AT THIS STAGE THE ASSIGNMENT (S) WITHOUT REFERENCES ARE NOT AUTHENTIC. THEREFORE PROPER REFERENCES WITH IN THE TEXT AND IN THE BIBLIOGRAPHY SHOULD BE MENTIONED WITHOUT REFERENCES THE ASSIGNMENT(S) WILL NOT BE ACCEPTABLE.**

Course: Nature of Science in Science Education (6779) Semester: Autumn, 2013
Level: Ph. D (Science Education) Total Marks: 100
Pass Marks: 50

1. Response to each question should be realistic.
2. Write answers in your own words after reading the textbook/materials.
3. Avoid irrelevant information, reproduction from any text and give a critical analysis of the questions asked for.
4. Write your assignment in legible handwriting.
5. Give source in case of quoting any material. (proper references inside the assignment and in bibliography)
6. Submit the assignment on or before specified date.
7. Late assignment will not be accepted in any case.

ASSIGNMENT No. 1
(Units: 1-4)

- Q. 1 Discuss the following views. (5 x 2)
- a) Science is an attempt to explain natural phenomena.
 - b) Science and technology impact each other.
- Q. 2 Philosophy, History, Sociology and Psychology, to which degree each of these four disciplines adds to knowledge of how science operates. (10)
- Q. 3 Explain the following myths: (5 x 2)
- (a) A hypothesis is an educated guess.
 - (b) Science is procedural more than creative.
- Q. 4 Prepare a lesson according to "learning by designing" about the following problem. (10)
"Plants absorb light and then make food"

- Q. 5 How science can be learn by rediscovering? Explain a strategy for rediscovery or investigation. (10)
- Q. 6 Explain in role of ethics, science and technology in the development of the society. (10)
- Q. 7 Two systems of concepts can share a great deal of formal structure but can still be different conceptual system. Explain with examples from any Science field, physics, Maths, Chemistry, Biology. (10)
- Q. 8 Discuss the concepts of space and time with reference to Sellarsian response conceptual system. (10)
- Q. 9 Explain the different theories of scientific progress. What are the effect of these theories on the progress and development of science? (10)
- Q. 10 Explain the following with examples. (5 x 2)
- (a) Progress and Rationality.
 - (b) Progress and Goals.

ASSIGNMENT No. 2

(Units: 5–9)

Total Marks: 100

Pass Marks: 50

- Q. 1 What is Black-Box activities? How and what students will learn from Black-box activities? (10)
- Q. 2 Explain the process of using a cooperative controversy lesson to teach aspects of the nature of science. (10)
- Q. 3 Explain the integrating nature of science with science education. (10)
- Q. 4 Discuss teaching the nature of science as an dement of science, technology and society. (10)
- Q. 5 Discuss the teacher education and the nature of science at secondary level. (10)
- Q. 6 Explain methods related to teaching about the nature of science at the secondary school level. (10)
- Q. 7 Prove that scientific ideas grow and change, are rooted in people and vary across cultures and with time. (10)
- Q. 8 How practical experience is connected to theory? Prove with examples. (10)
- Q. 9 Explain the nature and usability of the following assessment tools. (5 x 2)
- (a) Science Process Inventory (SPI)
 - (b) Nature of Science Test (NOST)
- Q. 10 Explain the Nature of Scientific Knowledge Scales (NSKS) (Rubba, 1976). (10)