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KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS

2017/2018 ACADEMIC YEAR

SECOND YEAR SECOND SEMESTER

MAIN EXAMINATIONS

FOR THE DEGREE OF BSC (PHYSICS)

COURSE CODE: SPH 213

COURSE TITLE: PHYSICS, SOCIETY & DEVELOPMENT

DURATION: 2 HOURS

DATE: 30 JULY 2018 TIME: 2-4PM

INSTRUCTIONS TO CANDIDATES

- Answer **QUESTION ONE** (Compulsory) and any other two (2) Questions.
- Indicate **answered questions** on the front cover.

Start every question on a new page and make sure question's number is written on each page

This paper consists of 3 printed pages. Please Turn Over

KIBU observes ZERO tolerance to examination cheating

SPH 213: PHYSICS, SOCIETY & DEVELOPMENT

QUESTION ONE [30 MARKS]

- a) Discuss any 2 challenges the H.E.L.B faces in its effort to provide loans to needy students in public universities. (4 marks)
- b) Define the terms 'Science' and 'Technology' (2 marks)
- c) When Kenya attained independence in 1963, the government was committed to expanding education. State three reasons for this commitment (3marks)
- d) The American physical society (APS) is the world's second largest organization of Physicists. List any two scientific journals that the society publishes. (2 marks)
- e) Give a brief account of the Copernicus view of the solar system (3 marks)
- f) What main point did the government address in sessional paper No.1 of 1986 on economic Management for renewed growth (2 marks)
- g) Since the achievement of independence the government and the people of Kenya have been committed to expanding education in Kenya. Give four reasons for this commitment.(4marks)
- h) Distinguish between basic and applied research. Give an example of each. (4 marks)
- i) What are Magnetically Levitated (Maglev) trains? (1mk)
- j) Using relevant examples, briefly discuss the factors that led to the failure of FPE of 1970. (5 marks)

QUESTION TWO [20 MARKS]

- a) Physics is an essential part of the educational system and of an advanced society. Therefore there is need for all governments to seek advice from physicists and other scientists on matters of science policy, and to be supportive of the science of Physics. Describe the various possible forms of support. (15 marks)
- b) Highlight the five major branches of physics. (5 marks)

QUESTION THREE [20 MARKS]

- a) Name the three early physicists referred to as the 'fathers of modern physics' and list their outstanding contributions to science and technology. (6 marks)
- b) Briefly explain the importance physics in the; (14 marks)
 - i) current society
 - ii) Meeting future energy requirements
 - iii) Economic development
 - iv) Environment

QUESTION FOUR [20 MARKS]

- a) The Science, Technology and innovation (ST & I) Grant of the National council for Science and Technology was established in 1979 mainly to support areas of research which are not being undertaken by publicly funded institutions and to assist talented researchers. List any 4 Grants available to Kenyan researchers and innovators under the (S.T & I) Grant. (4marks)
- b) In addition to research funding; the National Science Foundation (NSF) has launched a number of cross cutting projects that co-ordinates the efforts in many scientific disciplines. Give any four examples of these projects. (4marks)
- c) Briefly describe the growth and use of high technology under the following consumers of high- tech products citing the latest technological development.
- i) Military (6marks)
- ii) Transport (6marks)

QUESTION FIVE [20 MARKS]

- a) Define the terms, Physics, Society and Development (3marks)
- b) Discuss two major challenges that faced the government's efforts in providing free primary education in 2003 (4marks)
- c) In 1992, the government of Kenya set out objectives that would enable the informal sector/Juakali to grow. List the three categories and the objectives set by the government in each category. (12marks)
- d) In which year was the atomic bomb built and for which purpose was it used. (1mark)