ZIAUDDIN UNIVERSITY
EXAMINATION BOARD

RESOURCES FOR SSC-II

GENERAL SCIENCE

ZUEB EXAMINATIONS 2021

PREFACE:

The ZUEB examination board acknowledges the serious problems encountered by the schools and colleges in smooth execution of the teaching and learning processes due to sudden and prolonged school closures during the covid-19 spread. The board also recognizes the health, psychological and financial issues encountered by students due to the spread of covid-19.

Considering all these problems and issues the ZUEB Board has developed these resources based on the condensed syllabus 2021 to facilitate students in learning the content through quality resource materials.

The schools and students could download these materials from www.zueb.pk to prepare their students for the high quality and standardized ZUEB examinations 2021.

The materials consist of examination syllabus with specific students learning outcomes per topic, Multiple Choice Questions (MCQs) to assess different thinking levels, Constructed Response Questions (CRQs) with possible answers, Extended Response Questions (ERQs) with possible answers and learning materials.

ACADEMIC UNIT ZUEB:

1. **Extended Response Questions (ERQs)**

HOW TO ATTEMPT ERQs:

- Write the answer to each Constructed Response Question/ERQs in the space given below it.
- Use black pen/pencil to write the responses. Do not use glue or pin on the paper.

SECTION C (LONG ANSWER QUESTIONS)

1. Why ROM is called Nonvolatile memory. Explain?

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Chapter	Question	Answer	Cognitive Level	Difficulty Level
Energy	**1. Explain the difference between Kinetic Energy and Potential Energy with at least one example**	1) Potential Energy: The energy which is stored in a body due to its position is called potential energy. Example: Water stored in a dam at elevated position may be looking silent calm and stationery as if does not have any energy. But when it is released through tunnel it can move heavy turbines to generate electricity. 2) Kinetic Energy Kinetic energy also known as energy in motion. Example: The energy by virtue of motion of the body as the water falls or runs through a tunnel. This kinetic energy in falling water turns turbines at the base of large dams and the moving turbines moves the generator to generate electricity	**U**	**70%**
	2. Discuss Solar Energy and its extensive uses in present time.	Now a day's electric current is obtained from sun's energy. A device called a solar cell can change the energy of sunlight to electrical energy. Such solar cells are frequently used in calculators, watches etc. Batteries made up of solar cells have been used to run radios, television equipment in artificial satellites going around the earth. Each cell has surfaces made up of two different kinds of crystals. When sunlight strikes these surfaces, electric current flows between the two different crystals.	**U**	**80%**

		Scientists are working hard to harness the energy of sunlight. Solar cells have been constructed which convert sunlight into electrical energy which could be used to run our machines in homes and industries the solar energy will replace many of our conventional sources of energy which are being consumed very fast.		
Current Electricity	**3. State and Explain Ohm's Law**	We are now familiar with the fact that whenever a potential difference (V) is applied across the ends of a conductor a current (I) starts passing through it. If the value of V is altered then the value of current (I) is also found change. Now the question arises as to how the current varies with a change in the applied potential difference. The answer to this question was first found experimentally by a German physicist George Simon Ohm who discovered that "the current passing through a conductor is directly proportional to the potential difference applied across its ends provided the temperature and other physical condition of the conductor are kept constant". This statement is referred to as ohms law.	**K/R-U**	**70%**
Basic Electronics	**4. Define Electronics**	Electronics is a branch of physics which deals with the development of Electron emitting devices and their utilization and controlling of Electron flow in electrical circuits designed for various purposes. The impact of electronics on the daily life of people all over the world is considerable nowadays. These Electronics included radio, television, stereo hi-fi sound systems, motion pictures and video cassette recorders which	**K/R-U**	**80%**

		provide a lot of entertainment and information.		
Science and Technology	**5. Explain Radioactive Properties**	Radioactive properties • alpha-rays : 1. The mass of each a-particles is nearly four times the mass of hydrogen nucleus. 2. The ionization capability of a a-rays is very large 3. Penetration power of these rays is very small. • Beta rays: 1. These rays affect the photographic plate. 2. The ionization power of these rays is very small 3. The kinetic energy of beta rays is less than that of alpha rays • Y rays : 1. They eject electrons when incident on metals 2. The speed of these rays is equal to that of light. 3. Like alpha rays these rays also get absorbed in various materials	**U**	**80%**
Space and Nuclear Programme of Pakistan	**6. Discuss Pakistan's Space Programme.**	Space exploration yields useful information and provides useful economic benefits. Pakistan is one of the very few developing countries which has established an organization for Space research. The name of this organization is SUPARCO. It stands for Space and upper atmosphere research corporation. This organization has its research and testing facilities at Sonmiani near Karachi. It has fired several rockets for weather research. It has also established ground	**U**	**90%**

		stations to receive data from weather satellites round the clock, for short and long range weather forecasts.		
	7. Explain Pakistan's Nuclear Programme.	In 1995, Pakistan Atomic Energy Commission was established. In 1972 an Atomic Power Reactor was established near Karachi. This reactor is capable of producing 170 megawatt of electricity. The energy generated in the core is used to produce high pressure steam to generate electricity through steam turbines. Pakistani scientists have successfully fabricated fuel rod from uranium mined in Pakistan. The fuel used in Karachi Nuclear Power Plant is also made in Pakistan. Pakistan has a long term program of generating electricity with the help of atomic energy as its fossil fuel deposits are not adequate to meet the growing energy requirements. Pakistan has made significant contributions in the field of agriculture, medicine and industry. Institutes are set up at Faislabad and Tando Jam to work for long time preservation of food and fruits. There are a great number of nuclear centres/institutes all across the country. Pakistan has made notable progress in the field of atomic energy. And in future atomic energy will play an important role in Pakistan's economy.		