

SOAL UN SMA 2017 MATEMATIKA IPA

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Soal UN SMA 2017 Matematika IPA Beserta Jawaban

Soal UN SMA 2017 mata pelajaran Matematika IPA terdiri dari 40 soal pilihan ganda dan 5 soal uraian. Berikut ini beberapa contoh soal dan jawabannya:

Pilihan Ganda

1. Diketahui persamaan kuadrat $x^2 - 4x + c = 0$ memiliki akar-akar x_1 dan x_2 . Jika $x_1 + x_2 = 4$, maka nilai c adalah (A) 4 (B) 8 (C) 16 (D) 25
2. Tentukan hasil dari $(2^3)^2 \times (2^2)^{1/2}$ (A) 2^1 (B) 2^2 (C) 2^2 (D) 2^3

Uraian

1. Diketahui kubus ABCD.EFGH dengan panjang rusuk 6 cm. Tentukan: (a) Panjang diagonal bidang ABFE (b) Jarak titik A ke bidang BDEF
2. Sebuah kerucut mempunyai jari-jari alas 5 cm dan tinggi 12 cm. Di sekeliling kerucut tersebut dililitkan kawat sebanyak 10 kali. Tentukan panjang kawat tersebut!
3. Diketahui persamaan lingkaran $(x - 2)^2 + (y + 3)^2 = 25$. Tentukan titik pusat dan jari-jari lingkaran tersebut!

Jawaban

Pilihan Ganda

1. (A) 4
2. (C) 2^2

Uraian

1. (a) 6?5 cm (b) 6?2 cm
2. 100? cm
3. Pusat: (2, -3) Jari-jari: 5

Unit 1: Nature and Scope of Sociology

What is Sociology?

Sociology is the scientific study of society and human behavior. It examines the interactions between individuals, groups, and institutions, seeking to understand the structures, patterns, and processes that shape human society.

What is the Nature of Sociology?

Sociology is an empirical science, meaning it relies on observation and data collection to make generalizations about society. It is also a social science, as it focuses on interactions between people and groups. Sociology aims to be objective and value-free, avoiding biases that may influence its interpretations.

What is the Scope of Sociology?

The scope of sociology is vast and encompasses a wide range of topics, including:

- Social stratification and inequality
- Social institutions (e.g., family, education, religion)
- Social change and development
- Social problems and deviance
- Culture and socialization

Why is Sociology Important?

Sociology provides valuable insights into the complex workings of society. It helps us understand:

- The causes and consequences of social problems
- The role of social institutions in shaping our lives
- The forces that shape our identities and behaviors

- How to promote social justice and equality

Careers in Sociology

A degree in sociology opens doors to a variety of careers in:

- Social work
- Research and analysis
- Education
- Policy development
- Non-profit organizations
- Human resources

Transmission of Electrical Power Explained Simply

Electrical power is a form of energy that flows through conductors. It is used to power our homes, businesses, and transportation systems. The transmission of electrical power is a complex process that involves several stages.

1. Generation

The first step in the transmission of electrical power is generation. Electricity is generated in power plants, which convert mechanical energy into electrical energy. There are many different types of power plants, including coal-fired, natural gas-fired, nuclear, and renewable energy sources such as solar and wind.

2. Transmission

Once electricity is generated, it is transmitted to where it is needed. This is done through a network of power lines. Power lines are made of high-voltage conductors that are supported by towers or poles. The voltage of electricity is increased before it is transmitted through power lines to reduce energy losses.

3. Distribution

Once electricity arrives at its destination, it is distributed to homes and businesses. This is done through a network of distribution lines. Distribution lines are lower-

voltage conductors that are connected to transformers. Transformers reduce the voltage of electricity before it is delivered to homes and businesses.

4. Consumption

The final step in the transmission of electrical power is consumption. Electricity is used to power a variety of devices, including lights, appliances, and computers. When electricity is used, it is converted into other forms of energy, such as heat, light, or motion.

5. Questions and Answers

- **What is the difference between AC and DC power?** AC (alternating current) power is electricity that flows in a sinusoidal wave. DC (direct current) power is electricity that flows in one direction only. AC power is used for most applications, while DC power is used for some applications, such as batteries.
- **What is the voltage of electricity?** Voltage is the electrical potential difference between two points. It is measured in volts. The voltage of electricity can vary from a few volts to millions of volts.
- **What is the current of electricity?** Current is the flow of electrical charge. It is measured in amperes. The current of electricity can vary from a few milliamperes to thousands of amperes.
- **What is the power of electricity?** Power is the rate at which electrical energy is transferred. It is measured in watts. The power of electricity can vary from a few watts to millions of watts.

Schroeder Thermal Physics Solution: Q&A

Question 1: What is the difference between temperature and heat?

Answer: Temperature is a measure of the average kinetic energy of the particles in a substance, while heat is a form of energy that is transferred from one object to another due to a difference in temperature.

Question 2: Explain the concept of thermal equilibrium.

Answer: Thermal equilibrium occurs when two or more objects have the same temperature and are not exchanging heat. In this state, the net heat flow between the objects is zero.

Question 3: What is the first law of thermodynamics?

Answer: The first law of thermodynamics states that the total energy of an isolated system is constant. This means that energy can neither be created nor destroyed, only transferred or transformed.

Question 4: Describe the process of heat conduction.

Answer: Heat conduction is the transfer of heat through a material due to a temperature gradient. Heat flows from the hotter region of the material to the cooler region, and the rate of heat transfer is proportional to the temperature difference and the thermal conductivity of the material.

Question 5: What is the role of entropy in thermal physics?

Answer: Entropy is a measure of the disorder or randomness of a system. In a spontaneous process, entropy increases. The second law of thermodynamics states that the total entropy of an isolated system can never decrease over time.

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