

SCHAUM OUTLINE OF THERMODYNAMICS FOR ENGINEERS SOLUTION MANUAL

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Schaum's Outline of Thermodynamics for Engineers: Solution Manual

Question 1: A rigid tank initially contains 2 kg of air at 20°C and 0.1 MPa. The tank is then heated to 100°C. Determine the final pressure of the air in the tank.

Answer:

Step 1: Use the ideal gas law to find the initial volume of the air:

$$PV = mRT$$

$$V = mRT/P = (2 \text{ kg})(0.287 \text{ kJ/kg-K})(20 + 273 \text{ K}) / (0.1 \text{ MPa}) = 1.43 \text{ m}^3$$

Step 2: Since the tank is rigid, the volume remains constant. Use the ideal gas law again to find the final pressure:

$$PV = mRT$$

$$P = mRT/V = (2 \text{ kg})(0.287 \text{ kJ/kg-K})(100 + 273 \text{ K}) / (1.43 \text{ m}^3) = 0.23 \text{ MPa}$$

Question 2: A heat engine operates on a Carnot cycle between 300 K and 600 K. If the engine receives 1000 kJ of heat from the high-temperature reservoir, determine the efficiency of the engine.

Answer:

Step 1: Find the heat rejected to the low-temperature reservoir:

$$Q_L = Q_H * (T_L / T_H) = 1000 \text{ kJ} * (300 \text{ K} / 600 \text{ K}) = 500 \text{ kJ}$$

Step 2: Calculate the efficiency:

$$\eta = 1 - Q_L / Q_H = 1 - 500 \text{ kJ} / 1000 \text{ kJ} = 0.5 \text{ or } 50\%$$

Question 3: A refrigerator operates on a reversed Carnot cycle between 5°C and 25°C. If the refrigerator removes 500 kJ of heat from the cold reservoir, determine the work required to operate the refrigerator.

Answer:

Step 1: Find the heat transferred to the hot reservoir:

$$Q_H = Q_L * (T_H / T_L) = 500 \text{ kJ} * (25 + 273 \text{ K} / 5 + 273 \text{ K}) = 625 \text{ kJ}$$

Step 2: Calculate the work required:

$$W = Q_H - Q_L = 625 \text{ kJ} - 500 \text{ kJ} = 125 \text{ kJ}$$

Question 4: A steam turbine operates at a steady state with a power output of 10 MW. The steam enters the turbine at 4 MPa and 350°C and exits at 0.1 MPa and 50°C. Determine the mass flow rate of the steam through the turbine.

Answer:

Step 1: Find the specific work of the turbine:

$$w = (h_i - h_o) = 3154 \text{ kJ/kg} - 2293 \text{ kJ/kg} = 861 \text{ kJ/kg}$$

Step 2: Calculate the mass flow rate:

$$\dot{m} = P / w = 10,000 \text{ kW} / 861 \text{ kJ/kg} = 11.62 \text{ kg/s}$$

Question 5: A compressor operates at a steady state with a power input of 5 kW. The air enters the compressor at 101 kPa and 25°C and exits at 500 kPa and 100°C. Determine the mass flow rate of the air through the compressor.

Answer:

Step 1: Find the specific work of the compressor:

$$w = (h_o - h_i) = 606 \text{ kJ/kg} - 212 \text{ kJ/kg} = 394 \text{ kJ/kg}$$

Step 2: Calculate the mass flow rate:

$$\dot{m} = \dot{P} / w = 5 \text{ kW} / 394 \text{ kJ/kg} = 0.0127 \text{ kg/s}$$

What is the definition of economic populism? The definition of macroeconomic populism in the original paper states as follows: "Macroeconomic populism is an approach to economics that emphasizes growth and income distribution and deemphasizes the risks of inflation and deficit finance, external constraints and the reaction of economic agents to aggressive non- ...

What is the economic Globalisation theory? Economic globalization is the result of the development of economy and high technology. Economic globalization causes world-wide distribution of industries and renders the world as one.

What are the three types of globalization? Academic literature commonly divides globalization into three major areas: economic globalization, cultural globalization, and political globalization.

What is an example of economic globalization in everyday life? What are examples of economic globalization? Economic globalization is commonly seen as the import and export of goods. It can also be trade agreements that make barriers to trade easier to overcome. The presence of foreign companies and goods in another market is also an example.

What is the main idea of populism? Populism often entails presenting "the people" as the underdog. Populists typically seek to reveal to "the people" how they are oppressed. In doing so, they do not seek to change "the people", but rather seek to preserve the latter's "way of life" as it presently exists, regarding it as a source of good.

Is populism related to socialism? Traditionally, left-wing populism has been associated with the socialist movement; since the 2010s, there has been a movement close to left-wing populism in the left-liberal camp, some of which are considered social democratic positions.

What are the three main concepts of economic globalization? Elements of economic globalization The growth in cross-border economic activities takes five

principal forms: (1) international trade; (2) foreign direct investment; (3) capital market flows; (4) migration (movement of labor); and (5) diffusion of technology (Stiglitz, 2003).

What is the main idea of economic globalization? Economic globalization refers to the increasing interdependence of world economies as a result of the growing scale of cross-border trade of commodities and services, flow of international capital and wide and rapid spread of technologies.

Who is the father of economic globalization? Peter Sutherland, known as the 'father of globalisation', has died | World Economic Forum.

What are the three C's of globalization? Communication, collaboration, and cooperation: 3 key elements for globalization.

What is the negative effect of globalization on politics? The negative effects of globalisation include, greater inequality, increased corruption, reduction in sovereignty erosion of cultural identity and degradation of the environment.

Is globalization good or bad? Globalization is facilitated economically by free trade agreements, which permit barrier-free imports and exports across borders. While globalization brings many advantages—including lower prices and higher standards of living to some—it also has drawbacks, including wealth concentration and cultural homogeneity.

What are the negative effects of economic globalization? Globalization has also made it easier for people to access foreign goods and services, and has increased cultural exchange. On the negative side, globalization can lead to job losses and displacement as businesses relocate operations abroad or outsource labor, increased inequality, and environmental degradation.

What are the cons of globalization?

What is globalization in simple words? Globalization is the connection of different parts of the world. Globalization results in the expansion of international cultural, economic, and political activities.

What is the root cause of populism? “Cultural insecurity as the main root cause of populism”

Is populism still used today? Populism is an approach to politics which views "the people" as being opposed to "the elite" and is often used as a synonym of anti-establishment; as an ideology, it transcends the typical divisions of left and right and has become more prevalent in the US with the rise of disenfranchisement and apathy toward the ...

What is populism for dummies? The populists see themselves on the side of the common people. They want to help the common people get some of the rights and privileges of the elites. With its rhetoric of "the 99%" (the people) against "the 1%" (the elite), the international Occupy movement was an example of a populist social movement.

Is populism a Republican or Democratic Party? From the 1990s, right-wing populist parties became established in the legislatures of various democracies. Right-wing populism has remained the dominant political force in the Republican Party in the United States since the 2010s.

What political party is closely associated with populism? The People's Party, also known as the Populist Party or simply the Populists, was an agrarian populist political party in the United States in the late 19th century.

Is populism illiberal? Current populist leaders—especially within Western states—have the tendency to promote illiberal values, a notable example being the exclusion of immigrants and openly xenophobic statements.

What does populism mean in American government? Populism is an approach to politics which views "the people" as being opposed to "the elite" and is often used as a synonym of anti-establishment; as an ideology, it transcends the typical divisions of left and right and has become more prevalent in the US with the rise of disenfranchisement and apathy toward the ...

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What is the definition of populism quizlet? Populism. The ideology that the common people have the capability and power to have control over their government. SIGNIFICANCE: Gave the common people a voice.

What were the economic goals of the populist Party? The Ocala Demands laid out the Populist platform: collective bargaining, federal regulation of railroad rates, an expansionary monetary policy, and a Sub-Treasury Plan that required the establishment of federally controlled warehouses to aid farmers.

What are the human rights according to Jack Donnelly? They are equal rights: one either is or is not a human being, and thus has exactly the same human rights as every other human being. They are inalienable rights: one cannot stop being a human being, and therefore cannot lose one's human rights, no matter how horribly one behaves nor how barbarously one is treated.

What is the synopsis of universal human rights in theory and practice? Brief summary Universal Human Rights in Theory and Practice by Jack Donnelly explores the philosophical and political foundations of human rights, and examines their application in the context of contemporary global issues. It provides a comprehensive and thought-provoking analysis of this important topic.

Are human rights universal in Google Scholar? Human rights are universal in the sense that they are the rights one claims as a human being, irrespective of particulars such as gender, citizenship, cultural identity, institutional circumstances, or race.

What is the theory of universal human rights? Human rights are universal since they are said to belong to all humans in every society. Human rights are also supposed to be inalienable; because they flow from and protect human existence, they cannot be taken away without endangering the value of that existence.

What is the main idea of the Universal Declaration of Human Rights? Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, colour, sex, language, religion, political or other

opinion, national or social origin, property, birth or other status.

What is the purpose of the universal human rights? WHAT IS IT DESIGNED TO DO? The UDHR is a milestone document. For the first time, the world had a globally agreed document that marked out all humans as being free and equal, regardless of sex, colour, creed, religion or other characteristics.

What is the argument for universal human rights? For human rights to be universally respected, countries should not be picking and choosing which abuses they care about. Next, human rights must be seen as compatible with all cultures. Too many authoritarian leaders and states push back against human rights, using tradition as an excuse.

What are the three universal human rights? Everyone has the right to life, liberty and security of person. No one shall be held in slavery or servitude; slavery and the slave trade shall be prohibited in all their forms. No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment.

What proves human rights are universal? All people everywhere in the world are entitled to them. The universality of human rights is encompassed in the words of Article 1 of the Universal Declaration of Human Rights: "All human beings are born free and equal in dignity and rights." Indivisibility: Human rights are indivisible.

Who said human rights are universal? The Universal Declaration of Human Rights (UDHR), adopted by the UN General Assembly in 1948, was the first legal document to set out the fundamental human rights to be universally protected.

Are human rights universal or culturally relative? The framers of the Declaration, who came from diverse countries and cultures, ultimately succeeded in delivering the first universal articulation of human rights and entitlements that make dignity, justice and equality possible for everyone everywhere.

Unit 10: Market Research in Business

Learn Marketing: Q&A

1. What is the importance of market research in business?

Market research provides valuable insights into consumer needs, preferences, and market trends. It helps businesses anticipate and adapt to changing market conditions, target their products and services effectively, and make informed decisions to gain a competitive advantage.

2. What are the different types of market research methods?

There are various market research methods, including observational research (e.g., surveys, interviews), experimental research (e.g., A/B testing), and qualitative research (e.g., focus groups, ethnography). The choice of method depends on the specific objectives of the research.

3. How can businesses use market research to inform their marketing strategies?

Market research findings can help businesses refine their marketing mix (product, price, promotion, place) to align it with the needs and preferences of their target audience. It also assists in understanding competitive dynamics, identifying potential opportunities, and evaluating the effectiveness of marketing campaigns.

4. What are some common challenges faced in market research?

Challenges include designing effective research instruments, obtaining representative samples, interpreting the results accurately, and overcoming biases. Researchers must carefully consider these factors to ensure the quality and reliability of the research findings.

5. How can technology enhance market research?

Technology has revolutionized market research. Online surveys, social media listening tools, and advanced data analytics enable researchers to gather and analyze large amounts of data more efficiently and cost-effectively. Additionally, artificial intelligence (AI) can automate certain tasks and provide insights from unstructured data.

[populism and the economics of globalization dani rodrik, jack donnelly universal human rights in theory and practice, unit 10 market research in business learn marketing](#)

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analysis brief therapy protocol for group individual sessions