
UNIVERSITI SAINS MALAYSIA

Second Semester Examination
Academic Session 2008/2009

April/May 2009

EUP 222/3 – Engineer in Society
[Jurutera Dalam Masyarakat]

Duration: 3 hours
[Masa : 3 jam]

Please check that this examination paper consists of **TWENTY FIVE (25)** printed pages before you begin the examination.

*[Sila pastikan kertas peperiksaan ini mengandungi **DUA PULUH LIMA (25)** muka surat bercetak sebelum anda memulakan peperiksaan ini.]*

Instructions: This paper consists **FOUR (4)** parts.

Part A - Answer question 1 (Part A) and choose **THREE (3)** questions from Part B, C or D.

Part B - Answer all questions.

Part C - Answer **TWO (2)** questions. Question 3 is compulsory.

Part D - Answer all objective questions.

[Arahan: Kertas ini mengandungi **EMPAT (4)** bahagian.

Bahagian A - Jawab soalan 1 (Bahagian A) dan pilih **TIGA (3)** soalan dari bahagian B, C atau D.

Bahagian B - Jawab semua soalan.

Bahagian C - Jawab **DUA (2)** soalan. Soalan 3 wajib dijawab.

Bahagian D - Jawab semua soalan objektif.

You may answer the question either in Bahasa Malaysia or English.

[Anda dibenarkan menjawab soalan sama ada dalam Bahasa Malaysia atau Bahasa Inggeris.]

All questions **MUST BE** answered on a new page.

*[Semua soalan **MESTILAH** dijawab pada muka surat baru.]*

Write the answered question numbers on the cover sheet of the answer script.

[Tuliskan nombor soalan yang dijawab di luar kulit buku jawapan anda.]

PART A - BASICS OF LAW

1. Read the case below. Question a) is **COMPULSORY** and select three questions from b) or c) or d) or e).

Power Save Company (PSC), a manufacturer of energy saving products using advanced technology for electric motors. The EcoPower, the latest product this company is an electronic motor and usually saves 20 to 40% of the electricity consumption used by an escalator motor once it is at full capacity. The EcoPower not only conserves energy, but it also reduces motor operating temperature to increase lifespan and reduce breakdowns of escalator. By conserving energy, the EcoPower also reduces greenhouse gas emissions. The EcoPower is based on power consumption efficiency's and energy saving technology. Power Save Company manufactures products based on this technology using its own brand name, the EcoPower®.

BuildSys Company then is a company that installs the EcoPower in new escalator system on order-basis from customers that want to reduce the energy consumption of their organizations. BuildSys Company entered into an equipment supply contract with Power Save Company. This company agreed to design and supply EcoPower units for BuildSys Company with a contract price of RM 600,000. After analyzing of EcoPower units, Power Save Company guaranteed in the contract that the EcoPower units would reduce 40% of the energy in the escalator system and that this will result in substantial savings in energy costs.

These EcoPower units will be installed by BuildSys Company for Tanjung International Airport based on another contract worth RM 900,000 signed between both sides. This contract contained a provision limiting BuildSys's total liability to RM 600,000 for any loss, damage or injury resulting from BuildSys's performance of its services under the contract.

The EcoPower units were installed and were operational; however, certain defects in the EcoPower units prevented the products from saving more than 10% of the power in the escalator system. After repeated unsuccessful attempts by Power Save Company to remedy the defect, BuildSys Company hired another supplier, who, for an additional RM 800,000, replaced the energy saving product, EcoPower. The replacement was able to achieve the level of performance originally promised by BuildSys Company to Tanjung International Airport.

- a) What is the position of the contract between Power Save Company and BuildSys Company? Is BuildSys Company entitled to terminate the contract in this situation? Explain.

[10 Marks]

- b) Explain and discuss what claim Tanjung International Airport can make against BuildSys Company in this condition?

[5 Marks]

- c) What is/are the function/functions of BuildSys Company in this case?.

[5 marks]

- d) What is/are the most suitable type of intellectual property protection if Power Save Company wants to protect Eco Power from the making, using or selling of that invention by others?

[5 Marks]

- e) Is this case related to the law of Tort? Give your justifications.

[5 Marks]

PART B - BASICS OF ACCOUNTING**Answer All Questions.**

2. Assume that Sppedy Engineering Consultancy Company experienced the following transactions during the year ended 31 December 2008:

ITEM-ITEM:	RM	ITEM-ITEM:	RM
Rent expense	7 500	Common stock	25 000
Lorry	14 600	Dividend	10 200
Supplies	2 500	Accounts payable	6 700
Salary expense	19 400	Service revenue	45 500
Accounts receivable	8 200	Salary payable	1 200
Notes payable	11 000	Utility expense	5 000
Interest expense	1 200	Cash	20 800

- a) Prepare the income statement of Sppedy Engineering Consultancy Company for the month ended 31 December 2008.

[6 Marks]

- b) Prepare the statement of retained earnings of Sppedy Engineering Consultancy Company for the month ended 31 December 2008.

[3 Marks]

- c) Prepare the balance sheet of Sppedy Engineering Consultancy Company at 31 December 2008.

[6 Marks]

- d) Explain the performance of this company based on those financial statement.

[4 Marks]

- e) For the following, identify these items in the correct section of a cash flow statement. Use (O) for operating activities, (I) for investment activities, (F) for financing activities and (N) if the item does not appear anywhere on the cash flow statement.

		Parts in Cash Flow Statement
i.	Purchase of stock	
ii.	Sale of land for cash	
iii.	Depreciation of machinery	
iv.	Net income	
v.	Payment of cash dividends.	
vi.	Loss on sale of equipment	
vii.	Purchase of stock as a long-term investment	
viii.	Payment of 10% stock dividend.	
vix.	Payment of income tax	
x.	Collection of accounts receivable	

[6 Marks]

PART C – BASICS OF MANAGEMENT

Answer TWO (2) questions only. Question 3 is compulsory.

3. a) Identify **THREE (3)** key elements under each of the following management functions:

- i) Planning
- ii) Staffing

[10 Marks]

b) By using appropriate example if necessary, elaborate the meaning of each element specified in (i) and (ii)

[5 Marks]

4. a) Provide **THREE (3)** examples that may lead to failure of organizations in developing projects.

[5 Marks]

b) By using your own words expressions, elaborate each of the given examples.

[5 Marks]

5. a) Provide **THREE (3)** examples of professional skills required by managers:

[5 Marks]

b) By using your own words expressions, elaborate each of the given examples.

[5 Marks]

**PART D: ENGINEERING IN HISTORY, ENGINEERING IN DEVELOPMENT,
ENGINEERING IN ENVIRONMENT AND ETHICS IN ENGINEERING**

Respond by selecting the correct answer to each question.

I. Engineering in History

1. What is normally regarded as reason to learn history?
 - A. History teaches about the past as guide for us to embrace the future.
 - B. History provides good entertainment.
 - C. History reveals dark sides of humanity.
 - D. History is an art subject normally put aside by engineers and not read.

2. Which of the following lists of Malaysian engineering achievements has the correct chronological order – earliest mentioned first?
 - A. MODENAS, Penang Bridge, KLIA, MyCard, Country became world largest semiconductor manufacturer, Establishment of MSC
 - B. KLIA, MyCard, Country became world largest semiconductor manufacturer, Establishment of MSC, MODENAS, Penang Bridge
 - C. Country became world largest semiconductor manufacturer, Penang Bridge, Establishment of MSC, MODENAS, KLIA, MyCard
 - D. Establishment of MSC, MODENAS, KLIA, MyCard, Country became world largest semiconductor manufacturer, Penang Bridge

3. Which of the following lists of World ancient civilizations has the correct chronological order – earliest mentioned first?
 - A. Neolithic (New Stone) Age, Paleolithic (Old Stone) Age, Bronze Age, Iron Age.
 - B. Neolithic (New Stone) Age, Bronze Age, Paleolithic (Old Stone) Age, Iron Age.
 - C. Paleolithic (Old Stone) Age, Neolithic (New Stone) Age, Bronze Age, Iron Age.
 - D. Paleolithic (Old Stone) Age, Iron Age, Neolithic (New Stone) Age, Bronze Age.

4. Which of the following lists all consists of the names of contributors from European renaissance period?
- A. Ibn Sina, Al-Battani, Khwarizmi, Ibn Al-Haitham
 - B. Pythagoras, Aristotle, Archimedes, Hippocrates, Guternberg
 - C. Aristarchus, Hipparchus, Eratosthenes, Euclid, Demetrius Poliorcetes
 - D. Leonardo De Vinci, Nicholas Copernicus, Descartes, Galileo, Isaac Newton
5. Which of the following terms correctly states the definition of engineering according to the (American) Accreditation Board for Engineering and Technology or ABET.
- A. The profession in which a knowledge of the mathematical and natural sciences gained by study, experience, and practice, is applied with judgment to develop ways to utilize, economically, the materials and forces of nature for the benefit of mankind.
 - B. The branch of profession that encompasses the generation and application of heat and mechanical power and the design, production, and use of machines and tools.
 - C. The branch of profession concerned with the design, manufacture, installation, and operation of engines, machines, and manufacturing processes essential to an industrial economy.
 - D. A professional discipline that involves the application of principles of physics for analysis, design, manufacturing, and maintenance of systems.
6. Which of the following causes was not part of reasons that brought down Roman civilization?
- A. Moral decay in life.
 - B. Decline in patriotism.
 - C. Cost of government and military became too much.
 - D. Roman Empire was too small as a country.

II. Engineering in Development

7. Which of the following statements does not give correct explanation of the meaning of development?
- A. Development is growth, evolution, or advancement.
 - B. Development is a situation where politician is in full control of the society.
 - C. Development is the most important challenge facing humanity.
 - D. Development is the transformation from low-productivity society into high-productivity one.
8. Which of the following lists of countries has the highest per capita GNP in 2008?
- A. Singapore, Qatar, Kuwait, UAE, Hong Kong
 - B. Switzerland, Iceland, Netherlands, Sweden, Denmark
 - C. Saudi Arabia, Bahrain, Argentina, Russia, Mexico
 - D. Tanzania, Togo, Burkina Faso, Swaziland, Rwanda
9. In which range of years is the Seventh Malaysian Plan carried out?
- A. 2006-2010
 - B. 2001-2005
 - C. 1996-2000
 - D. 1991-1995
10. What was the about rate of poverty in Malaysia in 1997?
- A. 77% of household
 - B. 57% of household
 - C. 27% of household
 - D. 7% of household

11. What was the aim of the New Economic Policy?
- A. To displace and relocate foreigners out of Malaysia.
 - B. To eradicate poverty and restructure society in order to attain national unity and to foster nation building.
 - C. To help Bumiputera by taking away from other components of Malaysian population.
 - D. To achieve advanced country status for Malaysia by the year 2020.
12. Which of the following roles is not part of an engineer's responsibility for development of the country?
- A. To have a sense of ethics and professionalism.
 - B. To maintain high standard in practice.
 - C. To be always aware of environmental and safety issues.
 - D. To stick to traditional technology and way of life.

III. Engineering in Environment

13. Sustainability means:
- A. Consumption of non-renewable energy
 - B. Making rooms for future generations to live happily.
 - C. Consumption of renewable energy but much faster than the renew rate.
 - D. Polluting the environment over the ability of earth to absorb it.
14. Which of the following statements is part of the aims of Malaysia National Environmental policy (2002)?
- A. To provide shelter for natives displaced by development projects.
 - B. To continue economic, social, and cultural progress and enhancement of the quality of life of people through environmentally sound and sustainable development.
 - C. To provide leadership and to encourage partnership in caring for the environment by inspiring, informing, and enabling nations and people to improve their quality of life without compromising that of future generations.
 - D. To promote, enhance, and sustain sound environmental management procedure in the process of nation building.

15. What is the aim of the Department of Environment (DOE), Malaysia?
- A. To provide shelter for natives displaced by development projects.
 - B. To continue economic, social, and cultural progress and enhancement of the quality of life of people through environmentally sound and sustainable development.
 - C. To provide leadership and to encourage partnership in caring for the environment by inspiring, informing, and enabling nations and people to improve their quality of life without compromising that of future generations.
 - D. To promote, enhance, and sustain sound environmental management procedure in the process of nation building.
16. Which of the following crazy ideas have not yet actually been thought of and proposed by scientist?
- A. To green deserts with plants in enhancing carbon sinks.
 - B. To reflect solar radiation by injecting aerosols to upper atmosphere.
 - C. To dispose Carbon Dioxide by injecting liquid CO₂ to the bottom of the sea.
 - D. To grow trees on the moon for future habitation.
17. Which of the following reasons is not part of why Bakun project should not have been undertaken according to NGO's?
- A. Potential catastrophic failure due to earthquake.
 - B. Potential shortened operating life due to sedimentation.
 - C. Resettlement of indigenous people has caused problems.
 - D. The country does not really need that much electrical power
18. Which of the following Malaysian cities is most unplanned in its initial growth?
- A. Shah Alam
 - B. Putrajaya
 - C. Cyberjaya
 - D. Kuala Lumpur

IV. Ethics in Engineering

19. Which of the following activities is part of activities carried out by the Institution of Engineers Malaysia?
- A. Promote honest practice
 - B. Regulates honest practice
 - C. Arrange lecturers and conferences
 - D. Encourage study of engineering
20. Which of the following organizations officially maintains and cares for codes of ethics of Malaysian Engineers?
- A. Engineering Accreditation Council, Malaysia.
 - B. National Board of Accreditation, Malaysia
 - C. Institution of Engineers, Malaysia
 - D. Board of Engineers, Malaysia
21. Which of the following statements does not say properly about the Board of Engineers, Malaysia?
- A. Board members consist of high standing engineers from public sector, private sector, and local authorities.
 - B. The government appoints board members and registrar
 - C. Board of Engineers, Malaysia promotes inter state games and other competitions.
 - D. Board of Engineers, Malaysia regulates the conduct and ethics of engineering profession.
22. Which of the following statements does not say correctly of the content of Code of Ethics of engineers?
- A. Every professional engineer shall strive to bring his name or name of his organization to fame or great standing by taking part in professional competitions in design and supervision.
 - B. Every professional engineer shall discharge his duties to his employer or client with complete fidelity.

- C. Every professional engineer, in his responsibility to his employer, client or the profession, shall have full regard to the public interest.
 - D. Every professional engineer shall at all times uphold the dignity, high standing, and reputation of his profession.
23. Which of the following requirements is not prerequisite of a professional engineer seeking extension of his qualification?
- A. To have attended or given professional courses recognized by the Institution of Engineers or Board of Engineers.
 - B. To have practiced engineering for the year either in design, supervision, management, teaching, and research.
 - C. To have paid or to pay professional fee for the year he or she is seeking extension in.
 - D. To have been a member of Institution of Engineers, Malaysia.
24. Which of the following statement does not say properly of expected character of professional engineer?
- A. Possesses education, knowledge, and skills in an engineering specialty.
 - B. Stays abreast of discoveries and technological changes by participation in meetings and conferences.
 - C. Ensures professional source of income by not revealing trade secrets.
 - D. Guards his honor and ideals by following codes of ethics
25. Which of the following statement is not very correct when talking about ethics?
- A. Ethics is relative to one's own time, society, and generation.
 - B. An action is good if it maximize welfare of the public.
 - C. A virtuous person exhibit good and beneficial qualities.
 - D. Democracy is good from all angle of views.

[25 Marks]

(TERJEMAHAN)**BAHAGIAN A - ASAS UNDANG-UNDANG**

1. Baca kes di bawah. Soalan (a) adalah **WAJIB** dan pilih tiga soalan dari (b) atau (c) atau (d) atau (e).

Syarikat Power Save (SPS), sebuah pengeluar produk-produk penjimatan tenaga menggunakan teknologi termaju untuk motor elektrik. EcoPower, produk terbaru syarikat ini merupakan sebuah motor elektronik dan lazimnya menjimatkan 20 hingga 40% dari penggunaan elektrik oleh sesebuah motor eskalator apabila ia berada di tahap kapasiti penuh. EcoPower bukan sahaja menjimatkan tenaga, tetapi ia juga mengurangkan suhu pengoperasian motor untuk meningkatkan jangka hayat dan mengurangkan kerosakan eskalator. Dengan menjimatkan tenaga, EcoPower juga mengurangkan pelepasan gas rumah hijau. EcoPower adalah berdasarkan teknologi keberkesanan penggunaan teknologi dan penjimatan tenaga. Syarikat Power Save mengeluarkan produk-produk berasaskan teknologi ini menggunakan jenamanya sendiri iaitu EcoPower®.

Syarikat BuildSys (BuildSys) pula adalah sebuah syarikat yang memasang EcoPower dalam sistem eskalator baru berdasarkan pesanan dari para pelanggan yang hendak mengurangkan penggunaan tenaga bagi organisasi mereka. Syarikat BuildSys memasuki satu kontrak pembekalan peralatan dengan Syarikat Power Save. Syarikat ini bersetuju merekabentuk dan membekal unit-unit EcoPower untuk Syarikat BuildSys dengan harga kontrak RM 600,000. Selepas menganalisis unit-unit EcoPower, Syarikat Power Save telah memberi jaminan dalam kontrak tersebut bahawa unit-unit EcoPower bakal mengurangkan 40% tenaga dalam sistem eskalator dan ini akan menghasilkan penjimatan besar dalam kos tenaga.

Unit-unit EcoPower ini akan dipasang oleh Syarikat BuildSys untuk Lapangan Terbang Antarabangsa Tanjung berdasarkan satu kontrak lain bernilai RM 900,000 yang telah ditandatangani diantara kedua-dua belah pihak. Kontrak ini mengandungi satu syarat yang menghadkan jumlah tanggungan BuildSys kepada RM 600,000 untuk sebarang kerugian, kerosakan dan kecederaan disebabkan oleh perlaksanaan perkhidmatan oleh BuildSys dibawah kontrak tersebut.

Unit-unit EcoPower telah dipasang dan telah beroperasi; walaubagaimana pun, beberapa kecacatan dalam unit-unit EcoPower telah menghalang produk-produk tersebut dari menjimatkan 10% dari tenaga dalam sistem eskaltor. Selepas kegagalan percubaan ulangan oleh Syarikat Power Save untuk membaiki kecacatan tersebut, Syarikat BuildSys mengambil sebuah pembakal lain, yang mana untuk tambahan RM 800,000, menggantikan produk penjimatan tenaga, EcoPower. Penggantian ini telah mampu mencapai tahap prestasi yang pada awalnya dijanjikan oleh Syarikat BuildSys kepada Lapangan Terbang Antarabangsa Tanjung.

a) *Apakah kedudukan kontrak diantara Syarikat Power Save dan Syarikat BuildSys? Adakah Syarikat BuildSys berhak membatalkan contract tersebut dalam keadaan ini? Jelaskan.*

[10 Markah]

b) *Nyatakan dan bincangkan apakah tuntutan yang boleh dibuat oleh Lapangan Terbang Antarabangsa Tanjung terhadap Syarikat BuildSys dalam keadaan ini?*

[5 Markah]

c) *Apakah fungsi atau fungsi-fungsi Syarikat BuildSys dalam kes ini?*

[5 Markah]

d) *Apakah jenis atau jenis-jenis perlindungan harta intelek yang paling sesuai jika Syarikat Power Save ingin melindungi Eco Power dari dibuat, digunakan dan dijual oleh pihak lain?*

[5 Markah]

e) *Adakah kes ini berkaitan dengan undang-undang Tort? Beri justifikasi anda.*

[5 Markah]

PART B - ASAS PERAKAUNAN**Jawab semua soalan.**

2. Andaikan Syarikat Perunding Kejuruteraan Sppedy mengalami urusan-urusan berikut semasa tahun berakhir 31 Disember 2008:

ITEM-ITEM:	RM	ITEM-ITEM:	RM
<i>Belanja sewa</i>	<i>7 500</i>	<i>Saham biasa</i>	<i>25 000</i>
<i>Lori</i>	<i>14 600</i>	<i>Dividen</i>	<i>10 200</i>
<i>Bekalan</i>	<i>2 500</i>	<i>Akaun belum bayar</i>	<i>6 700</i>
<i>Belanja gaji</i>	<i>19 400</i>	<i>Hasil perkhidmatan</i>	<i>45 500</i>
<i>Akaun belum terima</i>	<i>8 200</i>	<i>Gaji belum bayar</i>	<i>1 200</i>
<i>Nota belum bayar</i>	<i>11 000</i>	<i>Belanja utiliti</i>	<i>5 000</i>
<i>Belanja faedah</i>	<i>1 200</i>	<i>Tunai</i>	<i>20 800</i>

- a) Sediakan penyata pendapatan Syarikat Perunding Kejuruteraan Sppedy bagi bulan berakhir 31 Disember 2008.

[6 Markah]

- b) Sediakan penyata pendapatan tertahan Syarikat Perunding Kejuruteraan Sppedy bagi bulan berakhir 31 Disember 2008 .

[3 Markah]

- c) Sediakan kunci kira-kira Syarikat Perunding Kejuruteraan Sppedy pada 31 Disember 2008.

[6 Markah]

- d) Terangkan prestasi syarikat ini berdasarkan penyata-penyata kewangan tersebut.

[4 Markah]

- e) Bagi yang berikut ini, kenalpasti item-item ini dalam bahagian yang betul di penyata aliran tunai. Gunakan (O) untuk aktiviti operasi, (I) untuk aktiviti pelaburan, (F) untuk aktiviti pembiayaan dan (N) jika tidak wujud di penyata aliran tunai.

		<i>Bahagian di Penyata Aliran Tunai</i>
i.	<i>Pembelian saham</i>	
ii.	<i>Jualan tanah untuk tunai</i>	
iii.	<i>Susutnilai mesin</i>	
iv.	<i>Pendapatan bersih</i>	
v.	<i>Pembayaran dividen tunai</i>	
vi.	<i>Rugi dari penjualan peralatan</i>	
vii.	<i>Pembelian saham sebagai pelaburan jangka panjang</i>	
viii.	<i>Pembayaran 10% dividen saham</i>	
vix.	<i>Pembayaran cukai pendapatan</i>	
x.	<i>Kutipan akaun belum terima</i>	

(6 Markah)

PART C – ASAS PENGURUSAN

Jawab DUA soalan sahaja. Soalan 3 adalah wajib.

3. a) *Kenal pasti TIGA (3) elemen di bawah setiap fungsi pengurusan berikut:*

- i) *Perancangan*
- ii) *Pengambilan staf*

[10 Markah]

b) *Dengan menggunakan contoh yang sesuai jika diperlukan, huraikan maksud setiap elemen yang dikenalpasti di (i) dan (ii)*

[5 Markah]

4. a) *Senaraikan TIGA (3) contoh yang boleh menyebabkan kegagalan sesebuah organisasi dalam membangunkan projek.*

[5 Markah]

b) *Dengan menggunakan ayat yang sesuai, huraikan setiap contoh yang diberikan*

[5 Markah]

5. a) *Senaraikan TIGA (3) contoh kemahiran profesional yang diperlukan oleh seorang pengurus.*

[5 Markah]

b) *Dengan menggunakan ayat yang sesuai, huraikan setiap contoh yang diberikan*

[5 Markah]

PART D: Sejarah Kejuruteraan, Kejuruteraan Pembangunan, Kejuruteraan Persekitaran, dan Etika Kejuruteraan.

Pilih jawapan yang betul.

V. Sejarah Kejuruteraan

26. *Nyatakan sebab utama belajar sejarah?*
- A. *Sejarah mengajar perkara lepas dan yang akan datang.*
 - B. *Sejarah menghibur.*
 - C. *Sejarah mperlihatkan kejahatan manusia.*
 - D. *Sejarah suatu sastera yang tidak mendatangkan minat kepada jurutera.*
2. *Yang mana diantara senarai berikut menyusun dengan tertib pncapaian kejuruteraan di Malaysia – yang awal didahulukan?*
- A. *MODENAS, Jambatan Pulau Pinang, KLIA, MyCard, Negara menjadi pengeluar semi-conductor terbesar dunia, MSC.*
 - B. *KLIA, MyCard, Negara menjadi pengeluar semi-conductor terbesar dunia, MSC, MODENAS, Jambatan Pulau Pinang.*
 - C. *Negara menjadi pengeluar semi-conductor terbesar dunia, Jambatan Pulau Pinang, MSC, MODENAS, KLIA, MyCard.*
 - D. *MSC, MODENAS, KLIA, MyCard, Negara menjadi pengeluar semi-conductor terbesar dunia, Jambatan Pulau Pinang.*
3. *Yang mana diantara senarai berikut menyusun dengan tertib tamadun kuno dunia – yang awal didahulukan?*
- A. *Zaman Neolitik (batu baru), Zaman Paleolitik (batu lama), Zaman Tembaga, Zaman Besi.*
 - B. *Zaman Neolitik (batu baru), Zaman Tembaga, Zaman Paleolitik (batu lama), Zaman Besi.*
 - C. *Zaman Paleolitik (batu lama), Zaman Neolitik (batu baru), Zaman Tembaga, Zaman Besi.*
 - D. *Zaman Paleolitik (batu lama), Zaman Besi, Zaman Neolitik (batu baru), Zaman Tembaga.*

4. *Yang mana diantara senarai berikut kesemuanya mengandungi nama-nama penyumbang daripada zaman kebangkitan Eropah?*
- A. *Ibn Sina, Al-Battani, Khwarizmi, Ibn Al-Haitham*
 - B. *Pythagoras, Aristotle, Archimedes, Hippocrates, Guternberg*
 - C. *Aristarchus, Hipparchus, Eratosthenes, Euclid, Demetrius Poliorcetes*
 - D. *Leonardo De Vinci, Nicholas Copernicus, Descartes, Galileo, Isaac Newton*
5. *Yang mana diantara ungkapan berikut menyatakan dengan sempurna maksud kejuruteraan menurut takrifan Lembaga Akreditasi Kejuruteraan dan Teknologi (Amerika Syarikat).*
- A. *Suatu kerjaya melibatkan penggunaan ilmu matematik dan sains yang memberi manfaat kepada manusia sejagat. Ilmu didapati melalui pembelajaran, pengalaman, dan praktis dan digunakan secara waras.*
 - B. *Suatu kerjaya melibatkan penjanaan dan penggunaan haba dan kuasa teknikal. .*
 - C. *Suatu kerjaya melibatkan rekabentuk, pembuatan, pemasangan, dan operasi enjin, mesin, dan kilang.*
 - D. *Suatu kerjaya melibatkan penggunaan prinsip-prinsip fizik dalam menganalisa, merekabentuk, mengilang, dan menyelenggara sistem.*
6. *Yang mana diantara sebab-sebab berikut sebenarnya bukan menyebabkan kejatuhan tamadun Rom?*
- A. *Keruntuhan moral.*
 - B. *Berkurangnya semangat kebangsaan.*
 - C. *Peningkatan kos pentadbiran dan ketenteraan.*
 - D. *Empayar Rom menjadi sangat kecil.*

VI. Kejuruteraan Pembangunan

7. *Kenyataan berikut yang mana satukah yang tidak menerangkan maksud pembangunan?*
- A. *Pembangunan peningkatan, evolusi, dan kemajuan.*
 - B. *Pembangunan suatu keadaan apabila ahli politik berkuasa.*
 - C. *Pembangunan cabaran paling besar umat manusia.*
 - D. *Pembangunan peningkatan produktiviti.*
8. *Yang mana diantara senarai berikut kesemuanya mengandungi nama negara-negara berperkapita tertinggi bagi tahun 2008?*
- A. *Singapore, Qatar, Kuwait, UAE, Hong Kong*
 - B. *Switzerland, Iceland, Netherlands, Sweden, Denmark*
 - C. *Saudi Arabia, Bahrain, Argentina, Russia, Mexico*
 - D. *Tanzania, Togo, Burkina Faso, Swaziland, Rwanda*
9. *Pada tahun berapakah Rancangan Malaysia Ke Lapan berjalan?*
- A. *2006-2010*
 - B. *2001-2005*
 - C. *1996-2000*
 - D. *1991-1995*
10. *Berapakah kadar kemiskinan di Malaysia pada tahun 1997?*
- A. *77% dari penduduk*
 - B. *57% dari penduduk*
 - C. *27% dari penduduk*
 - D. *7% dari penduduk*

11. *Apakah tujuan Dasar Ekonomi Baru?*
- A. *Memberi laluan orang keluar daripada negara ini.*
 - B. *Membentaras kemiskinan dan menyusun semula masyarakat bagi mencapai perpaduan nasional dan meningkatkan pembangunan negara.*
 - C. *Membantu kaum bumiputera mendapatkan semula kekayaan daripada golongan lain.*
 - D. *Mencapai hasrat negara maju pada tahun 2020.*
12. *Yang mana diantara berikut bukan sebahagian daripada peranan jurutera bagi meningkatkan kemajuan Negara?*
- A. *Meningkatkan etika dan profesionalisma.*
 - B. *Meningkatkan kualiti kerja.*
 - C. *Sentiasa sedar akan isu-isu persekitaran dan keselamatan.*
 - D. *Mengamalkan cara lama.*

VII. *Kejuruteraan Persekitaran*

13. *Pembangunan lestari bermaksud:*
- A. *Penggunaan tenaga tak boleh diperbaharui.*
 - B. *Memberi peluang bagi kehidupan generasi akan datang.*
 - C. *Penggunaan tenaga yang banyak.*
 - D. *Mengotorkan persekitaran.*
14. *Yang mana daripada kenyataan berikut sebahagian daripada tujuan Dasar Alam Sekitar Kebangsaan (2002)?*
- A. *Melindungi puak-puak asli yang terpinggir kerana projek-projek pembangunan.*
 - B. *Memajukan lagi perkembangan ekonomi, sosial, dan kebudayaan serta meningkatkan lagi kualiti hidup dikalangan penduduk melalui pembangunan persekitaran yang baik.*
 - C. *Memimpin untuk bekerjasama dalam penjagaan alam sekitar melalui penyebaran maklumat kepada negara-negara dunia serta penduduknya supaya mencapai mutu kehidupan yang lebih baik tanpa membebankan generasi akan datang.*
 - D. *Mengalakkan pengurusan alam sekitar yang baik.*

15. *Apakah tujuan ditubuhkan Jabatan Alam Sekitar (JAS), Malaysia?*
- A. *Melindungi puak-puak asli yang terpinggir kerana projek-projek pembangunan.*
 - B. *Memajukan lagi perkembangan ekonomi, sosial, dan kebudayaan serta meningkatkan lagi kualiti hidup dikalangan penduduk melalui pembangunan persekitaran yang baik.*
 - C. *Memimpin untuk bekerjasama dalam penjagaan alam sekitar melalui penyebaran maklumat kepada negara-negara dunia serta penduduknya supaya mencapai mutu kehidupan yang lebih baik tanpa membebankan generasi akan datang.*
 - D. *Mengalakkan pengurusan alam sekitar yang baik.*
16. *Yang mana diantara idea gila yang berikut belum lagi dicadangkan oleh para saintis bagi menangani beberapa masalah tentang kehidupan didunia ini?*
- A. *Menghijaukan gurun.*
 - B. *Membalikkan radiasi solar menggunakan aerosol.*
 - C. *Membuang CO₂ ke dasar laut.*
 - D. *Menanam pokok di bulan.*
17. *Yang mana diantara berikut bukan antara sebab yang disebut oleh Pertubuhan-Pertubuhan Bukan Kerajaan mengapa projek Bakun sepatutnya tidak dijalankan?*
- A. *Kemungkinan malapetaka daripada gempa bumi.*
 - B. *Kemungkinan pendeknya jangka hayat kerana sedimentasi.*
 - C. *Masalah memindahkan penduduk asal.*
 - D. *Negara sebenarnya tidak perlukan tenaga elektrik yang begitu banyak.*
18. *Bandar kerikut yang mana satu paling tidak terancang pembangunannya?*
- A. *Shah Alam*
 - B. *Putrajaya*
 - C. *Cyberjaya*
 - D. *Kuala Lumpur*

VIII. Etika Kejuruteraan

19. Aktiviti berikut yang mana satu tiada sangkut paut dengan Institusi Jurutera Malaysia?
- A. Menggalakkan praktis yang jujur.
 - B. Mengadakan undang-undang bagi praktis yang jujur.
 - C. Mengadakan persidangan dan ucapan.
 - D. Menggalakkan pembelajaran kejuruteraan.
20. Badan berikut yang manakah yang mengendalikan secara rasmi hal ehwal kod etika para jurutera?
- A. Badan Akreditasi Kejuruteraan, Malaysia.
 - B. Lembaga Akreditasi Nasional, Malaysia
 - C. Institusi Jurutera Malaysia.
 - D. Lembaga Jurutera Malaysia.
21. Yang mana diantara kenyataan berikut tidak menyebut dengan wajar tentang Lembaga Jurutera Malaysia?
- A. Ahli lembaga terdiri daripada jurutera-jurutera badan kerajaan, sektor awam, sektor swasta, dan kerajaan tempatan.
 - B. Kerajaan melantik ahli lembaga dan pendaftar.
 - C. Lembaga Jurutera Malaysia menganjurkan sukan dan lain-lain pertandingan.
 - D. Lembaga Jurutera Malaysia mengadakan undang-undang tentang etika jurutera.
22. Yang mana diantara kenyataan berikut tidak menyebut dengan tepat kandungan Kod Etika jurutera?
- A. Setiap jurutera professional hendaklah berusaha supaya dirinya atau syarikatnya menjadi terkenal dengan sentiasa mengambil bahagian dalam setiap pertandingan.
 - B. Setiap jurutera professional hendaklah menjalankan tugas dengan penuh jujur.

- C. *Setiap jurutera professional hendaklah menjalankan tugas dengan mengutamakan kepentingan orang awam.*
- D. *Setiap jurutera professional hendaklah pada setiap masa menjaga kehormatan dan kemuliaan kerjayanya.*
23. *Yang mana diantara kenyataan berikut bukan syarat bagi seseorang jurutera yang ingin memperbaharui kelayakan profesionalnya?*
- A. *Telah menghadiri atau memberi kursus-kursus yang diiktiraf oleh Institusi Jurutera Malaysia.*
- B. *Telah menjalankan praktis kejuruteraan sama ada melalui rekabentuk, penyeliaan, pengurusan, pengajaran, atau penyelidikan.*
- C. *Membayar yuran.*
- D. *Menjadi ahli Institusi Jurutera Malaysia.*
24. *Yang mana diantara kenyataan berikut tidak menyebut tentang perilaku yang wajar bagi jurutera professional?*
- A. *Mempunyai pendidikan, ilmu, dan kebolehan dalam bidang kejuruteraan.*
- B. *Sentiasa mendapatkan maklumat terkini tentang perkembangan teknologi bidangnya.*
- C. *Memastikan pendapatan lumayan dengan cara menyimpan rahsia perniagaan.*
- D. *Menjaga kehormatan dan kemuliaan kerjayanya dengan sentiasa berpegang teguh kepada kod etika.*
25. *Kenyataan berikut yang mana satu tidak begitu betul apabila bercakap fasal etika?*
- A. *Etika bergantung kepada zaman, masyarakat, dan generasi.*
- B. *Sesuatu perbuatan itu bagus sekiranya kebajikan masyarakat terpelihara.*
- C. *Seseorang itu baik sekiranya dia memberi kebaikan kepada orang lain.*
- D. *Demokrasi baik daripada segala sudut.*

[25 Markah]

