M. Tech. 3rd Semester (CSE) – CBCS Scheme

Examination, December 2024

Knowledge based system

Paper : 16CSE23C1

Time allowed : 3 hours]   [Maximum marks : 100

Note : Attempt **five** questions in all, selecting **one** from each unit. **Q. No. 1 is compulsory.**

1.   Write short note on following :   20

    (i) Propositional Logic

    (ii) Partitioned Nets

    (iii) BFS

    (iv) Fuzzy Logic

Unit–I

2.   Describe in detail about Semantic Tableaux and Resolution in Predicate Logic.   20

3.   Explain the following :   20

    (i)   Logic Programming in Prolog

    (ii) FOPL

22671-P-2-Q-9 (24)   [P.T.O.

Unit–II

4. Explain in detail about Architecture of Knowledge Based System. 20

5. Explain the following : 20

   (i) Semantic Nets

   (ii) Thematic Role Frames

Unit–III

6. Describe the following : 20

   (i) Iterative Deepening

   (ii) DFS

7. Give a complete description about Heuristic Search. 20

Unit–IV

8. Explain the following : 20

   (i) Uncertainty Management in Expert System

   (ii) Bayesian Theory

9. Define Agents. Explain their application in Intelligent System. 20

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M.Tech 3rd Semester (CSE) CBCS Scheme
Examination, November-2023
KNOWLEDGE BASE SYSTEM
Paper–16CSE23C1

Time allowed : 3 hours]   [Maximum marks : 100

Note: **Question No. 1 is compulsory.** *Attempt any* ***five*** *questions. All questions carry equal marks.*

1. (a) Differentiate between the Knowledge base and Database.

   (b) Express the wff (Γ A (Γ B $\longrightarrow$ C)) $\longleftrightarrow$ D in CNF.

   (c) Explain Resolution in Propositional Logic.

   (d) Explain Forward Chaining.

   (e) Differentiate between Heuristic and Blind search with a suitable example.

Unit-I

2. Are the following arguments valid? Prove using Semantic Tableau, Resolution, and Truth table.

   "If Sam lives in Delhi, he lives in Haryana. Sam lives in Delhi. Therefore Sam lives in Haryana."

3. What are the different advantages of Predicate Logic over Propositional Logic? Also, give various components of Predicate Logic.

22671-P-2-Q-9 (23)   [P. T. O.

Unit-II

4. Explain the Semantic Net and Partitioned Net in detail and draw both the net by taking a suitable example.

5. Explain Rule-Based Systems, Frame-based systems by using their architecture.

Unit-III

6. Write an algorithm for DFS. Also calculate its time and space complexity. What are the limitations of DFS? Write some advantages over BFS.

7. Explain Hill Climbing Algorithm with a suitable example. Also, write the problem associated with this Algorithm.

Unit-IV

8. What are Agents? What are its types? Give their Application in Intelligent Systems.

9. What are the different limitations of Bayes Theory and Conventional Probability Theory? How can these limitations be solved using Dempster-Shafer's Theory? Also, state this theory.

M. Tech (CSE) 3rd Semester (CBCS Scheme)

Examination, December-2022

KNOWLEDGE BASED SYSTEM

Paper-16CSE23C1

Time allowed : 3 hours]   *[Maximum marks : 100*

Note : *Question No. 1 is **compulsory**. Attempt **five** questions in total, first being compulsory and selecting **one** from each unit.*

1. (a) What is propositional logic ? Give an example.   5

     (b) Explain the concept of knowledge representation.   5

     (c) What is iterative Deepening ?   5

     (d) What is Bayes Network ? Explain.   5

Unit-I

2. What is predicate logic ? Explain Semantic Tebleaux and Resolution in Predicate Logic.   20

3. Write short note on Logic Programming in Prolog.   20

     [P.T.O.

Unit-II

4. What is knowledge based system ? Explain its architecture. And compare it with rule based systems and frame-based systems in brief. 20

5. (a) What is Parallel implementation of Semantic Nets ? Explain in detail. 10

   (b) Differentiate between Forward and Backward Chaining. 10

Unit-III

6. Explain the following algorithms in detail : 2×10=20

   (a) Hill climbing algorithm

   (b) A* algorithm

7. What is Uninformed Search ? Explain depth First Search and Breadth First Search in detail. 20

Unit-IV

8. (a) What is fuzzy logic ? Explain uncertainty management in expert systems in brief. 10

   (b) What are probabilistic methods ? Explain in detail. 10

9. What are agents ? Explain their applications in intelligent system. 20

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M. Tech. 3rd Semester, (CSE) – CBCS Scheme

Examination, December 2024

NETWORK SECURITY

Paper : 16CSE23C2

Time allowed : 3 hours]   *[Maximum marks : 100*

Note : Question No. 1 is compulsory. Attempt four more questions selecting one from each unit. All questions carry equal marks.

1. **Compulsory Question :**

   (i) What is the role of substitution techniques in classical encryption?

   (ii) Define Steganography and its purpose in security.

   (iii) What is the RSA algorithm used for in cryptography?

   (iv) How does the Diffie-Hellman key exchange ensure communication?

   (v) What is the purpose of the Secure Socket Layer (SSL) Protocol?

   (vi) Define the role of Time Stamping Protocol (TSP) in secure communication.

   (vii) What are the different types of firewalls?

22672-P-2-Q-9 (24)   [P.T.O.

(viii) How does a virus pose a threat to system security?

Unit–I

2. Explain the OSI security architecture and how it helps in network security.

3. Discuss the differences between symmetric and asymmetric key cryptography, with examples.

Unit–II

4. Describe the Data Encryption Standard (DES) and its importance in encryption.

5. Explain the working of the Advanced Encryption Standard (AES) and compare it with Triple DES.

Unit–III

6. Compare and contrast the SSL and SET protocols highlighting their strengths and weaknesses.

7. Discuss the role of email security protocols and how they protect electronic communication.

Unit–IV

8. Explain the role of Kerberos and X.509 authentication services in network security.

9. Discuss the importance of firewalls in protecting trusted systems and the various firewall designs.

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M.Tech. 3rd Semester (CSE)-CBCS Scheme

Examination, November–2023

NETWORK SECURITY

Paper–16CSE23C2

Time allowed : 3 hours]   [Maximum marks : 100

Note : Attempt *five* questions in all, selecting **one** question from each unit. **Q. No. 1 is compulsory.**

1. Write short note on following :   20
   (i)   Cryptography
   (ii) DES
   (iii) Secure Socket layer
   (iv) Firewall

Unit–I

2. Describe in detail about OSI Security architecture. 20

3. What do you understand by substitution Techniques in Network security ?   20

Unit–II

4. Explain the following :   20
   (i) Blowfish Algorithm
   (ii) Advanced Encryption Standard

22672–P–2–Q–9 (23)   **[P.T.O.**

5. Define Public Key Cryptography. Also explain about Principles of Public Key Cryptography. 20

Unit–III

6. Describe the following : 20

   (i) SHTTP

   (ii) TLS

7. Explain the following : 20

   (i) Electronic Money

   (ii) SET

Unit–IV

8. Explain the following : 20

   (i) Kerberos

   (ii) Role of firewalls

9. Define Intruder. Also explain about Intruder Detection System. 20

M. Tech (CSE) 3rd Semester (CBCS Scheme)

Examination, December-2022

NETWORK SECURITY

Paper-16CSE23C2

Time allowed : 3 hours]   *[Maximum marks : 100*

Note : *Question No. 1 is compulsory. Attempt **four** more questions selecting one from each unit. All questions carry equal marks.*

1. Write a short note on the followings :

   (i) Differentiate Plain text and cipher text.

   (ii) How is Steganography different from Cryptography ?

   (iii) Explain Secure Socket Layer (SSL) ?

   (iv) What is an Intrusion detection system ?

Unit-I

2. Differentiate between symmetric and asymmetric key cryptography by taking a suitable example.

3. Explain Classical Encryption techniques with suitable examples.

22672-P-2-Q-9 (22)   **[P. T. O.**

Unit-II

4. What is RSA algorithm ? Explain it. In a RSA algorithm, it is given that p = 7, q = 11, e = 17 and M = 8, find the cipher text 'C' and decrypt the 'C' to set the plain text M.

5. Explain advanced Encryption Standard (AES) in detail by taking a suitable example.

Unit-III

6. Explain SHTTP. How it is different from HTTP ? Also, highlight the feature of the Time Stamping Protocol (TSP).

7. What is Transport Layer Securities (TLS) ? How is it different from SSL. Compare them.

Unit-IV

8. What is Firewall ? Give types of Firewalls and also discuss the Firewalls design principles.

9. Write a short note on the following :

   (a) Kerberos

   (b) Malicious Codes

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M. A. Economics 3rd Semester
(Open Elective Courses w. e. f. Dec.-2017)
Examination – December - 2024

PRINCIPLES OF ECONOMICS

Paper : 16ECO02

Time : Three hours]   [Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

प्रश्नों के उत्तर देने से पहले परीक्षार्थी यह सुनिश्चित कर लें कि उनको पूर्ण एवं सही प्रश्न-पत्र मिला है। परीक्षा के उपरान्त इस संबंध में कोई भी शिकायत नहीं सुनी जायेगी।

Note : Attempt *five* questions in all, selecting *one* question from each Unit. Question No. 1 is *compulsory*. All questions carry equal marks.

प्रत्येक इकाई से *एक* प्रश्न चुनते हुए, कुल *पाँच* प्रश्नों के उत्तर दीजिए। प्रश्न संख्या 1 *अनिवार्य* है। सभी प्रश्नों के अंक समान हैं।

1. Write short notes on the following : 8 × 2 = 16

निम्नलिखित पर संक्षिप्त टिप्पणी लिखिए :

(a) Define Inflation.

मुद्रास्फीति को परिभाषित करें।

(b) Define Density of Population.

जनसंख्या के घनत्व को परिभाषित करें।

(c) Four causes of Poverty.

गरीबी के चार कारण।

(d) Role of land reforms in agriculture.

कृषि में भूमि सुधारों की भूमिका।

(e) Female work participation rate in India.

भारत में महिला कार्य भागीदारी दर।

(f) Economics is both a Positive and a Normative Science.

अर्थशास्त्र एक सकारात्मक और मानक विज्ञान दोनों है।

(g) Green Revolution.

हरित क्रांति।

(h) Voluntary Unemployment.

स्वैच्छिक बेरोजगारी।

UNIT – I

इकाई – I

2. Describe the difference between deductive and inductive methods in economics. How do both contribute to economic theory development ? 16

अर्थशास्त्र में निगमनात्मक और आगमनात्मक तरीकों के बीच अंतर का वर्णन करें। दोनों आर्थिक सिद्धांत के विकास में कैसे योगदान करते हैं ?

3. "Economics deals with means; the study of ends lies outside its scope." Discuss the statement critically. 16

"अर्थशास्त्र साधनों से संबंधित है; साध्यों का अध्ययन इसके दायरे से बाहर है।" कथन की आलोचनात्मक चर्चा करें।

UNIT – II

इकाई – II

4. Compare and contrast the main features of Indian economy at the dawn of independence and under the era of planned development. 16

स्वतंत्रता के आरम्भ में और योजनाबद्ध विकास के युग में भारतीय अर्थव्यवस्था की मुख्य विशेषताओं की तुलना करें और अंतर बताइए।

5. Discuss the causes of shift in strategy of planning during and after nineties. 16

नब्बे के दशक के दौरान और उसके बाद नियोजन की रणनीति में बदलाव के कारणों पर चर्चा करें।

UNIT – III
इकाई – III

6. Outline the causes of global inequalities in the levels of per capita income in different countries. 16

   विभिन्न देशों में प्रति व्यक्ति आय के स्तर में वैश्विक असमानताओं के कारणों की रूपरेखा प्रस्तुत करें।

7. Analyze different phases of population growth in India. Also, discuss causes of this trend behavior of population growth. 16

   भारत में जनसंख्या वृद्धि के विभिन्न चरणों का विश्लेषण करें। साथ ही, जनसंख्या वृद्धि की इस प्रवृत्ति के कारणों पर भी चर्चा करें।

UNIT – IV
इकाई – IV

8. What do you mean by land reforms ? What are the main causes of slow progress of land reforms in India ? Suggest measures for its success. 16

   भूमि सुधार से आप क्या समझते हैं ? भारत में भूमि सुधार की धीमी प्रगति के मुख्य कारण क्या हैं ? इसकी सफलता के उपाय सुझाइये।

9. Write an explanatory note on changes in industrial structure in India. 16

   भारत में औद्योगिक संरचना में परिवर्तन पर एक व्याख्यात्मक नोट लिखिए।

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M. A. Economics 3rd Semester (Open Elective Courses w.e.f. Dec.-2017) Examination – November, 2023

PRINCIPLES OF ECONOMICS

Paper : 16ECO02

Time : Three Hours]   *[Maximum Marks : 80*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

प्रश्नों के उत्तर देने से पहले परीक्षार्थी यह सुनिश्चित कर लें कि उनको पूर्ण एवं सही प्रश्न-पत्र मिला है। परीक्षा के उपरान्त इस संबंध में कोई भी शिकायत नहीं सुनी जायेगी।

Note : Attempt *five* questions in all, selecting *one* question from each Unit. Question No. **1** is *compulsory*. All questions carry equal marks.

प्रत्येक इकाई से *एक* प्रश्न का चयन करते हुए, कुल *पाँच* प्रश्नों के उत्तर दीजिए। प्रश्न संख्या **1** *अनिवार्य* है। सभी प्रश्नों के अंक समान हैं।

1. Short answer type questions (*Compulsory*) : 2 × 8 = 16

   लघु उत्तरीय प्रश्न (*अनिवार्य*) :

   (a) Economics is both a positive and a normative science.

   अर्थशास्त्र एक सकारात्मक और मानक विज्ञान दोनों है।

   (b) Voluntary unemployment.

   स्वैच्छिक बेरोजगारी।

   (c) Cost-push inflation.

   लागत-प्रेरित मुद्रास्फीति।

   (d) What is meant by population density ?

   जनसंख्या घनत्व से क्या तात्पर्य है ?

   (e) What is poverty index ?

   गरीबी सूचकांक क्या है ?

   (f) Concept of industrial efficiency.

   औद्योगिक दक्षता की अवधारणा।

   (g) What do you mean by industrial deregulation ?

   औद्योगिक विनियमन से आप क्या समझते हैं ?

   (h) What do you mean by female work participation rate in India ?

   भारत में महिला कार्य भागीदारी दर से आप क्या समझते हैं ?

UNIT – I
इकाई – I

2. Discuss the claims of economics to be regarded as a science. What is the significance of the study of economics ?   16

   अर्थशास्त्र को विज्ञान माने जाने के दावों पर चर्चा करें। अर्थशास्त्र के अध्ययन का क्या महत्त्व है ?

3. "Economics is the science of scarcity and choice." Discuss this statement.   16

   ''अर्थशास्त्र अभाव और विकल्प का विज्ञान है।'' इस कथन पर चर्चा करें।

UNIT – II
इकाई – II

4. What were the characteristics of the Indian economics at the time of Independence ?   16

   स्वतंत्रता के समय भारतीय अर्थव्यवस्था की क्या विशेषताएँ थीं ?

5. Define Planning. Explain the main accomplishments of planning in India.   16

   नियोजन को परिभाषित करें। भारत में नियोजन की प्रमुख उपलब्धियाँ बताइये।

UNIT – III
इकाई – III

6. Analyse different phases of population growth in India. Also discuss causes of this trend behaviour of population growth. 16

   भारत में जनसंख्या वृद्धि के विभिन्न चरणों का विश्लेषण करें। जनसंख्या वृद्धि की इस प्रवृत्ति के कारणों पर भी चर्चा करें।

7. Examine the trends in rate and pattern of unemployment in India. What measures will you suggest for removing unemployment? 16

   भारत में बेरोजगारी की दर और पैटर्न के रुझानों की जाँच करें। बेरोजगारी दूर करने के लिए आप क्या उपाय सुझायेंगे ?

UNIT – IV
इकाई – IV

8. Define green revolution. Explain factors responsible for green revolution in India. 16

   हरित क्रांति को परिभाषित करें। भारत में हरित क्रांति के लिए उत्तरदायी कारकों की व्याख्या करें।

9. Discuss the role of land reforms during the process of economic development. 16

   आर्थिक विकास की प्रक्रिया के दौरान भूमि सुधार की भूमिका पर चर्चा करें।