

SECOND SEMESTER P.G. DEGREE EXAMINATION, APRIL 2020

(CCSS)

Financial Economics

FEC 2C 09—PUBLIC FINANCE AND POLICY

(2019 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A

*Answer all questions.
Each question carries 1 mark.*

Multiple Choice Questions :

1. Principle of Maximum social advantage is advocated by :
 - (a) Dalton.
 - (b) Shirras.
 - (c) Musgrave.
 - (d) Samuelson.
2. Primary deficit is obtained by :
 - (a) Total expenditure - Total Receipts.
 - (b) Revenue Receipts- Revenue Expenditure.
 - (c) Budgetary deficit- interest payments.
 - (d) Fiscal deficit- interest payments.
3. Theory of Fiscal federalism was developed by :
 - (a) Buchanan.
 - (b) Richard Musgrave.
 - (c) Pigou.
 - (d) Dalton.
4. MODVAT scheme was introduced in India in the year :
 - (a) 1983.
 - (b) 1986.
 - (c) 1991.
 - (d) 1985.
5. Which one of the following is not a source of state tax revenue ?
 - (a) Land revenue.
 - (b) Motor vehicles tax.
 - (c) Entertainment tax.
 - (d) Corporate tax.

Turn over

6. Loans of public enterprises is a part of :
- (a) Capital expenditure.
 - (b) Revenue expenditure.
 - (c) Both revenue and capital expenditure.
 - (d) None of the above.
7. The concept of Zero based budgeting was developed by :
- (a) R. A. Musgrave.
 - (b) J. M. Keynes.
 - (c) Peter A Pyhr.
 - (d) A. H. Hansen.
8. Which of the following good is exempted from GST :
- (a) Mobile phones.
 - (b) Electricals.
 - (c) Vegetables.
 - (d) Gold.
9. Diffusion Theory is related to :
- (a) Public Expenditure.
 - (b) Taxation.
 - (c) Debt.
 - (d) Public choice.
10. Club goods theory was developed by :
- (a) Musgrave.
 - (b) Tullock.
 - (c) Buchanan.
 - (d) Dalton.

(10 × 1 = 10 marks)

Part B

*Answer any five questions.
Each question carries 2 marks.
Very Short Answer Questions.
Answer in one or two sentences each.*

- 11. Domar's stability condition for public debt.
- 12. Balanced budget multiplier.
- 13. Merit goods.
- 14. Subsidy.
- 15. Centrally Sponsored Scheme.
- 16. Externalities.

17. Capital Levy.
18. Public Choice.

(5 × 2 = 10 marks)

Part C

*Answer any eight questions.
Each question carries 5 marks.
Short Answer Questions.*

19. What is Vertical imbalance in inter-governmental transfers ?
20. How debt burden affect intergenerational equity ?
21. Discuss about the partial equilibrium analysis of a pure private good.
22. Write a note on Zero based budgeting in India.
23. Discuss the implications of FRBM Act in the current fiscal scenario.
24. Explain theory of optimal taxation.
25. Principles of debt management.
26. Explain the role of government in promoting economic development.
27. Balanced budget multiplier.
28. Different concepts of deficit in India.
29. What are the sources of revenue of local governments.
30. Discuss about distributional considerations in public finance.

(8 × 5 = 40 marks)

Part D

*Answer any two questions.
Each question carries 10 marks.
Essay Type Questions.*

31. Explain the benefit and ability to pay criteria of taxation.
32. Discuss the major recommendations of 15th Finance Commission in India.
33. Explain median voter theorem in determining public choice.
34. Examine the various forms of market failure and measures for correcting it.

(2 × 10 = 20 marks)

SECOND SEMESTER P.G. DEGREE EXAMINATION, APRIL 2020

(CCSS)

Financial Economics

FEC 2C 08—INTERNATIONAL TRADE : THEORY AND POLICY

(2019 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A*Answer all questions.**Each question carries 1 mark.*

1. Modern theory of International Trade is based on the view of :
 - (a) Ricardo and Smith.
 - (b) Adam Smith and Marshall.
 - (c) Heckscher and Ohlin.
 - (d) Mill and Ricardo.
2. Gold Standard means :
 - (a) Currency of the country is made of Gold.
 - (b) Paper currency is not used.
 - (c) Currency of the country is freely convertible to Gold.
 - (d) Both (a) and (c).
3. Which organisation provides long term loan to developing countries in order help them to develop their physical infrastructure :
 - (a) WTO.
 - (b) IMF.
 - (c) World Bank.
 - (d) ADB.
4. Intra industry trade theory :
 - (a) Explains why India export cloth to US and import mobile phones from US.
 - (b) Explains why India exports cars to US and imports cars from US.
 - (c) Assumes that transport cost do not exist.
 - (d) Explains the trade between a industrialised country and a non-industrialised country.

Turn over

5. According to Heckscher-Ohlin model, the source of comparative advantage is country's :
- (a) Technology.
 - (b) Foreign exchange available.
 - (c) Factor endowments.
 - (d) Both (a) and (b).
6. In the classical model of Ricardo, the direction of trade is determined by :
- (a) Physical Advantage.
 - (b) Comparative Advantage.
 - (c) Absolute Advantage.
 - (d) Factor Abundance.
7. The theory that contends that the country which initially develops and exports a new product may eventually become an importer of it and may no longer manufacture the product :
- (a) Theory of factor endowments.
 - (b) Brander-Krugman model.
 - (c) Product Cycle theory.
 - (d) Immizerising Growth theory
8. In his empirical test of Heckscher-Ohlin model, Wassely Leontiff found that :
- (a) US exports is capital intensive relative to US imports.
 - (b) US imports are labour intensive relative to US exports.
 - (c) US imports are neither capital intensive nor labour intensive.
 - (d) None of the above.
9. Ad valorem tariff are collected as :
- (a) Fixed amount of money per unit traded.
 - (b) A percentage of the price of the product.
 - (c) A percentage of the quantity of imports.
 - (d) All of the above.
10. Dumping refers to :
- (a) Selling goods in a foreign country at a price below the cost of production in the home country.
 - (b) Importing low quality goods at low price from foreign country.
 - (c) Importing large quantity of products with no tariff.
 - (d) None of the above.

(10 × 1 = 10 marks)

Part B (Very Short Answer Questions)

Answer all questions.

Each question carries 2 marks.

Answer in one or two sentences each.

11. Offer Curve.
12. Optimum Tariff.
13. Special Drawing Rights.
14. Foreign Institutional Investments.
15. Balance of Payment.
16. Terms of Trade.
17. Economic Union.
18. MFA status.

(5 × 2 = 10 marks)

Part C (Short Answer Questions)

Answer any eight questions.

Each question carries 5 marks.

19. Briefly explain the Metzler Paradox.
20. Describe the product cycle theory.
21. Explain the trade creation and trade diversion effects of Customs Union.
22. Describe the Rybczynski theorem.
23. Explain Immiserising growth concept.
24. Write a note on Non-Tariff Barriers.
25. What do you understand by Immitation Gap theorem.
26. What are the arguments for and against protection.
27. Examine the theory of Customs Union.
28. Explain the concept of Dutch disease.

Turn over

29. Bring out recent changes in the exports policies of India.
30. Explain the various forms of economic integration.

(8 × 5 = 40 marks)

Part D (Essay Type Questions)

Answer any two questions.

Each question carries 10 marks.

31. Explain the principle of “impossible trinity” using the Mundell-Fleming model.
32. Critically analyse the statement “Trade takes place even with the existence of similar factor proportions and tastes”.
33. Elucidate how the factor endowment theory could explain the comparative advantage between nations.
34. Bring out the rationale for economic integration and India's efforts towards forming trade blocks.

(2 × 10 = 20 marks)

SECOND SEMESTER P.G. DEGREE EXAMINATION, APRIL 2020

(CCSS)

Financial Economics

FEC 2C 07—STATISTICS FOR ECONOMICS

(2019 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A*Answer all questions.**Each question carries 1 mark.*

1. If $A = \{1, 2, 3\}$ and $B = \{3, 4\}$, then $A \cup B =$ _____.
(a) $\{ \}$. (b) $\{1, 2, 3, 4\}$.
(c) $\{1, 2\}$. (d) $\{3\}$.
2. The probability of selecting 2 red balls from a box containing 3 red and 4 white balls is _____.
(a) $3/7$. (b) $3/4$.
(c) $1/7$. (d) $2/7$.
3. The mean of a Poisson distribution with parameter λ is _____.
(a) λ . (b) λ^2 .
(c) $\sqrt{\lambda}$. (d) $1/\lambda$.
4. Name a distribution for which mean and variance are same :
(a) Binomial. (b) Normal.
(c) Exponential. (d) Poisson.
5. If X is normally distributed with mean μ and standard deviation, σ , $(X - \mu)/\sigma$ will be distributed as _____.
(a) $N(\mu, 1)$. (b) $N(0, \sigma)$.
(c) $N(2, \sigma)$. (d) $N(0, 1)$.

Turn over

6. The standard error of the mean of a random sample of size n from a normal distribution with standard deviation σ is :
- (a) σ . (b) σ/n .
 (c) σ^2/n . (d) σ/\sqrt{n} .
7. If for a test, the probability of type II error is β , its power is _____.
- (a) $\beta - 1$. (b) $1 - \beta$.
 (c) $1 + \beta$. (d) None of these.
8. The variance of a Chi-square distribution with 2 degrees of freedom is _____.
- (a) 4. (b) 2.
 (c) 1. (d) 8.
9. The non-parametric equivalent of independent samples t -test is :
- (a) Sign test. (b) Chi-square test.
 (c) Wilcoxon signed rank test. (d) Median test.
10. In the usual one-way model, the errors are distributed as :
- (a) $N(0, 1)$. (b) $N(\mu, 1)$.
 (c) $N(0, \sigma)$. (d) $N(\mu, \sigma)$.

(10 × 1 = 10 marks)

Part B (Very Short Answers)

Answer any five questions.

Each question carries 2 marks.

Answer in one or two sentences each.

11. What is the empirical definition of probability ?
12. State and prove multiplication theorem on expectation in a bivariate case.
13. Define distribution function of a continuous random variable.
14. State the additive property of binomial distribution.
15. What do you mean by interval estimation ?
16. What is the sampling distribution of the mean of a random sample taken from a normal distribution with mean μ and standard deviation σ ?

17. Write down the test statistic for testing significance of correlation co-efficient.
18. State and explain the model for two-way classified data.

(5 × 2 = 10 marks)

Part C (Short Answer Questions)

Answer any eight questions.

Each question carries 5 marks.

19. The following table provides data with regard to stature of fathers and their first sons at the age of 25 years :

		Stature of Fathers	
		Tall	Short
Stature of Sons	Tall	8	2
	Short	4	6

Test whether stature of sons is independent of that of fathers.

20. Explain Wilcoxon-Mann Whitney U test.
21. There are two groups consisting of 200 and 300 males coming respectively from urban and rural areas. 100 persons from urban area and 150 from rural area favoured family planning. Test the hypothesis that proportion of persons in urban and rural populations favouring family planning are the same.
22. Distinguish between small sample and large sample tests.
23. Construct a 100 (1 – α) % confidence interval for proportion.
24. Define mathematical expectation of a continuous random variable.
25. The probability density function of a random variable X is

$$f(x) = c(2x - x^2); 0 \leq x \leq 2.$$

Find the value of c.

26. Explain Central Limit theorem.
27. What are the important properties of normal distribution ?
28. What is the probability of getting three heads when an unbiased coin is tossed 5 times ?

Turn over

29. State the inter-relationships between normal, t , Chi-square and F distributions.
30. Explain the technique of analysis of variance.

(8 × 5 = 40 marks)

Part D (Essay Type Questions)*Answer any two questions.**Each question carries 10 marks.*

31. (a) State and prove Baye's theorem.
- (b) The chance that a doctor will diagnose a disease correctly is 75%. The chance that a patient will die by his treatment after correct diagnosis is 30% and the chance of death by wrong diagnosis is 70%. A patient of doctor A who had disease X died. Find the probability that his disease was diagnosed correctly ?
32. (a) Distinguish between parametric and non-parametric tests.
- (b) Following is a sequence of heads (H) and tails (T) in tossing of a coin 14 times.

HTTHHHTHTTHHHT

Test whether the heads and tails occur in random order ($\alpha = 0.05$, $R_L = 3$, $R_U = 12$)

33. Three types of fertilizers were applied to three varieties of maize and the following yields were obtained. Test whether fertilizers differ significantly in their effects. Also test whether varieties differ significantly :

		Varieties		
		V_1	V_2	V_3
Fertilizers	A	8	7	9
	B	8	10	6
	C	9	8	9

34. (a) What are the desirable properties of a good estimator ?
- (b) A random sample of 15 women has an average body weight of 53 kg and standard deviation of 3.6 kg. Find a 95% confidence interval for body weight in general.

(2 × 10 = 20 marks)

SECOND SEMESTER P.G. DEGREE EXAMINATION, APRIL 2020

(CCSS)

Financial Economics

FEC 2C 06—DEVELOPMENTS IN MODERN MACRO ECONOMICS

(2019 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A*Answer all questions.**Each question carries 1 mark.*

Choose the correct answer :

1. Joan Robinson is a :

- (a) New Keynesian. (b) Neo Keynesian.
(c) New Classical. (d) Post Keynesian.

2. Okun's law relates :

- (a) Unemployment with GDP. (b) Inflation with GDP.
(c) Inflation with unemployment. (d) None of the above.

3. The proposition that Keynesian critique was primarily directed against walrasian equilibrium was put forward by :

- (a) Post Keynesians. (b) New Keynesians.
(c) Neo Keynesians. (d) All of them.

4. Who among the following is associated with New Classical :

- (a) Clower. (b) Lucas.
(c) Kydland. (d) Hicks.

5. Efficiency wage model comes under :

- (a) Post Keynesian. (b) New classical.
(c) New Keynesian. (d) Neo Keynesian.

Turn over

6. The negative relationship between the gap between actual GDP and its trend value and the difference between actual unemployment rate and its equilibrium value is called :
- (a) Phillips curve. (b) Okun's Law.
(c) Aggregate supply curve. (d) Natural rate of Unemployment hypothesis.
7. Core inflation is defined as :
- (a) Headline inflation - food inflation.
(b) Food inflation + fuel inflation
(c) Headline inflation - (fuel inflation + food inflation)
(d) Headline inflation - fuel inflation.
8. Taylor rule is a forecasting model for determining :
- (a) Inflation. (b) Interest rate.
(c) Nominal GDP. (d) None of the above.
9. The concept of multiplier was first developed by :
- (a) Keynes. (b) R. F. Khan.
(c) J. D. Clark. (d) Samuelson.
10. The concept money illusion is firstly coined out by :
- (a) Fischer (b) Friedman.
(c) Keynes. (d) Marshall.

(10 × 1 = 10 marks)

Part B (Very Short Questions)

*Answer any five questions.
Each question carries 2 marks.*

11. Explain classical dichotomy.
12. What is misery index ?
13. What is dual decision hypothesis ?
14. What do you mean by signal extraction ?
15. What is headline inflation ?
16. What is PAYM insight ?
17. What is Natural rate of unemployment ?
18. What is adaptive expectations ?

(5 × 2 = 10 marks)

Part C (Short Answer Questions)

*Answer any eight questions.
Each question carries 5 marks.*

19. What are the cost associated with unexpected inflation ?
20. Explain the main postulates of New Keynesian thought.
21. Why were the classicals not able to resolve Great depression ?
22. Compare Cold turkey policy with gradualism.
23. Should monetary policy be active or passive ?
24. What is insider outsider theory ?
25. Explain the supply side view on fiscal policy.
26. Explain Leijonhfvud's critique of Hicks.
27. Why is it important for the monetary authority to have credibility ?
28. What causes natural rate of unemployment to increase ?
29. Explain Barro Ricardo equivalence hypothesis.
30. Explain Samuelson and Solows contribution to Phillips Curve.

(8 × 5 = 40 marks)

Part D (Essays)

*Answer any two questions.
Each question carries 10 marks.*

31. Explain short run and long run Phillips curve.
32. How does Real Business cycle theory explain Great depression ?
33. How did the New Keynesians develop the micro foundations of Keynesian economics ?
34. How does the New Classicals evolved from Monetarists ?

(2 × 10 = 20 marks)

SECOND SEMESTER P.G. DEGREE EXAMINATION, APRIL 2020

(CCSS)

Financial Economics

FEC 2C 05—MICROECONOMIC THEORY AND POLICY—II

(2019 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A*Choose the correct answer.*

1. In the simplex method, the slack, surplus and artificial variables are restricted to be :
 - (a) Multiplied.
 - (b) Negative.
 - (c) Non-negative.
 - (d) Divided.
2. The iron law of wages is :
 - (a) Marginal Productivity Theory.
 - (b) Wage fund Theory.
 - (c) Collective bargaining.
 - (d) The subsistence theory of wages.
3. The idea of 'Lemons' was propounded by :
 - (a) Akerlof.
 - (b) Bergson.
 - (c) Sen.
 - (d) Scitovsky.
4. Marginal Productivity theory of distribution was first formulated in its complete form by :
 - (a) Adam Smith.
 - (b) Ricardo.
 - (c) J. S. Mill.
 - (d) J. B. Clark.
5. Welfare economics is generally accepted as :
 - (a) Positive economics.
 - (b) Normative economics.
 - (c) Static economics.
 - (d) None of the above.
6. The market where services of factors of production are bought and sold is called :
 - (a) Product market.
 - (b) Factor market.
 - (c) Stock market.
 - (d) Open market.

Turn over

7. David Ricardo propounded the theory of :
- (a) Law of reciprocal demand. (b) Comparative advantage theory.
(c) Absolute advantage theory. (d) None of the above.
8. The concept of social welfare function was first introduced by :
- (a) Kaldor. (b) Samuelson.
(c) Pareto. (d) Bergson.
9. According to Kaldor- Hicks compensation criterion, the proposed change will increase social welfare if :
- (a) The gains are equal to loses.
(b) The losses are greater than the gains.
(c) The gains are greater than the losses.
(d) None of the above.
10. The return to a factor of production which is fixed in the short run is :
- (a) Scarcity rent. (b) Quasi rent.
(c) Contractual rent. (d) Economic rent.

(10 × 1 = 10 marks)

Part B

Give short answers to any five questions.

11. Define 'Point of Bliss'.
12. Explain how Insurance works.
13. What is Pigou Tax ?
14. Define Pareto-optimality.
15. Explain Coase Theorem.
16. State Hawkins-Simon condition.
17. List some negative externalities.
18. What is Quasi Rent ?

(5 × 2 = 10 marks)

Part C

Give short answers to any eight questions.

19. Define Public Good.
20. Explain Social Welfare function.
21. Explain the economic importance of linear programming.
22. Explain Sen's Capability Approach.
23. Define Scitovsky's double criterion.
24. What do you understand by market failure and how can state resolve it ?
25. Distinguish between general equilibrium and partial equilibrium.
26. Explain Akerlof's theory of 'Lemons'.
27. Distinguish between Ricardian and modern theories of Rent.
28. How does moral hazard work ?
29. Write a note on Euler's Theorem.
30. Explain in brief Input-Output analysis.

(8 × 5 = 40 marks)

Part D (Essays)

Answers any two questions.

31. Illustrate Walrasian Law of General Equilibrium.
32. Explain Rawls Theory of Justice. Compare and contrast it with Amartya Sen's welfare criterion.
33. Explain Kaldor's idea of distribution.
34. Explain Linear Programming with diagrammatical and numerical illustrations.

(2 × 10 = 20 marks)

SECOND SEMESTER P.G. DEGREE EXAMINATION, APRIL 2020

(CCSS)

Financial Economics

FEC 2C 09—TECHNIQUES OF SECURITY AND PORTFOLIO ANALYSIS

(2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A*Answer all questions.**Each question carries 1 mark.*

1. Dow theory was developed to explain :
 - (a) New York stock market movement.
 - (b) The Dow Jones Industrial average.
 - (c) Security market price movement.
 - (d) The buy and sell strategy.
2. The chartist believes that chart :
 - (a) Spot the current trend for buying and selling.
 - (b) Indicates the future action to be taken.
 - (c) Shows the past historic movement.
 - (d) All the above.
3. The critical variable in the determination of the success of the active portfolio is :
 - (a) Alpha/non-systematic risk.
 - (b) Alpha/systematic risk.
 - (c) Gamma/non-systematic risk.
 - (d) Gamma/systematic risk.
4. The highly liquid security is :
 - (a) Mutual fund units.
 - (b) Treasury bills.
 - (c) Shares.
 - (d) Commercial papers.
5. An investor is having their portfolio with the combination of stock and bonds in the ratio of 75 : 25. He is :
 - (a) Risk averse.
 - (b) Risk neutral.
 - (c) A risk taker.
 - (d) Active in portfolio management.

Turn over

6. Diversification reduces :
- (a) Interest rate risk.
 - (b) Market risk.
 - (c) Unique risk.
 - (d) Inflation risk.
7. If a professionally managed portfolio consistently outperforms the market proxy on a risk-adjusted basis and the market is efficient, it should be concluded that :
- (a) Either the CAPM is invalid or the proxy is inadequate.
 - (b) The proxy is inadequate.
 - (c) The CAPM is invalid.
 - (d) The CAPM is valid and the proxy is adequate.
8. The research by Fama and French suggesting that CAPM is invalid has generated which of the following responses ?
- (a) Theoretical sources and implications of research that contradicts CAPM needs to be reconsidered.
 - (b) Estimates of asset betas need to be improved.
 - (c) Better econometrics should be used in the test procedure.
 - (d) All of the above are true.
9. The interest-rate risk of a bond is :
- (a) The risk related to the possibility of bankruptcy of the bond's issuer.
 - (b) The risk that arises from the uncertainty of the bond's return caused by changes in interest rates.
 - (c) The unsystematic risk caused by factors unique in the bond.
 - (d) (a) and (b) above.
10. _____ refer to strategies aimed at attaining the established rate of return requirements while meeting expressed risk tolerance and applicable constraints.
- (a) Investment constraints.
 - (b) Investment objectives.
 - (c) Investment policies.
 - (d) All of the above.

(10 × 1 = 10 marks)

Part B

Answer any five questions.

Each question carries 2 marks.

11. Despite its limitations, why is the CAPM widely used ?
12. What are the basic premises of technical analysis ?
13. What is portfolio revision ?
14. Explain Fama's net selectivity measure.
15. What is spot interest rate ?
16. If the two year interest rate is 12.5 percent per annum, and the one year interest rate is 10.50 per cent, what does the market expect the one year interest rate to be a year from now ?
17. Discuss the factors affecting assigning the credit rating to securities.
18. What is book building ?

(5 × 2 = 10 marks)

Part C

Answer any eight questions.

Each question carries 5 marks.

19. List the key developments in the G-secs market in India from 1990 onwards.
20. What are the salient features of repo transactions in India ?
21. Explain the difference between hedging and speculation.
22. What are the principal tasks of SEBI ?
23. Discuss the types and features of debt instruments ?
24. Assume the CAPM holds and returns are generated by one-factor model, you are given the following information :

$$\sigma_m^2 = 625 \quad b_A = 0.90 \quad b_B = 1.25, \text{Cov.}(F, R_m) = 324$$

- a) Calculate the beta co-efficients of securities A and B.
- b) If the risk free rate is 8% and the expected return on the market portfolio is 15%, what is the equilibrium expected return on securities A and B ?

Turn over

25. Explain the difference between a security market line and the capital market line.
26. Discuss the different types of interest rate quotes that are important for money market instruments ?
27. Distinguish between internal debt and external debt. Discuss the internal debt obligations of the Government of India.
28. What are the advantages and drawbacks of call money market ?
29. What are the basic principles of technical analysis ?
30. Discuss the approaches in portfolio construction ?

(8 × 5 = 40 marks)

Part D

Answer any two questions.

Each question carries 10 marks.

31. What do you mean by the term New Issue Market ? Explain the different methods of floating new issues ?
32. Radhey Shyam owned five securities at the beginning of the year in the following amounts and with the following current and expected end-of-year prices :

Security	Share Amount	Current Price	Expected year-end price
A	100	50	65
B	150	30	40
C	75	20	25
D	100	25	32
E	125	40	47

What is the expected return on Shyam's portfolio for the year ?

33. Define the following : (i) Money risk ; (ii) Credit risk ; (iii) Inflation risk ; (iv) Currency risk ; (v) Political risk. Which of these risks are minimized by investing in money market instruments ? Can a money market investor avoid all of the above the risk factors ?
34. Explain the Capital Asset Pricing Model of portfolio management.

(2 × 10 = 20 marks)

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Name.....

Reg. No.....

SECOND SEMESTER P.G. DEGREE EXAMINATION, APRIL 2020

(CCSS)

Financial Economics

FEC 2C 07—STATISTICS FOR FINANCIAL ECONOMICS

(2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A

Answer all question.

Each question carries 1 mark.

Multiple Choice Questions :

1. Apriori definition of probability was given by :
 - (a) R.A. Fischer.
 - (b) Kolomogorov.
 - (c) Von Mises.
 - (d) De-Movire.
2. _____ is a continuous probability distribution.
 - (a) Binomial.
 - (b) Normal.
 - (c) Poisson.
 - (d) All the above.
3. The normal Curve is :
 - (a) B modal.
 - (b) Tri modal.
 - (c) Uni modal.
 - (d) Multi modal.
4. Parameters of Binomal distribution are :
 - (a) n and p .
 - (b) p and q .
 - (c) m and q .
 - (d) n and r .
5. F test is developed by :
 - (a) Gosset.
 - (b) Snedecore.
 - (c) R.A. Fisher.
 - (d) Pearson.

Turn over

6. Foundations of probability is the book of :

- (a) James Bernoulli. (b) Jerome Cardan.
 (c) Ya-Lin Chou. (d) K.N. Kolmogorov.

7. The standard error of sample mean is :

- (a) $\frac{\sigma}{\sqrt{n}}$. (b) $\frac{\sigma}{n}$.
 (c) $\frac{2\sigma}{\sqrt{n}}$. (d) $\sqrt{\sigma^2/2n}$.

8. The variance of the standard normal distribution is :

- (a) 1. (b) 0.
 (c) < 1. (d) > 1.

9. The mathematical expectation of a random variable is its :

- (a) Geometric mean. (b) Harmonic mean.
 (c) Arithmetic mean. (d) Median.

10. The probability of committing the Type I error is :

- (a) Level of significance. (b) Critical value.
 (c) Confidence co-efficient. (d) Power of the test.

(10 × 1 = 10 marks)

Part B (Very Short Answer Questions)

Answer any five questions.

Each question carries 2 marks.

11. State the theorems of mathematical expectations.

12. Define Normal distribution.

13. Explain the uses of standard error.

14. What is t distribution ?

15. What is standard error ?

16. 5 % of electric bulbs manufactured by a company are defective. Use Poisson distribution to find the probability that in a sample of 100 bulbs 5 bulb will be defective, given $e^{-5} = .007$.

17. Distinguish between point and interval estimation.
18. Define power of the test.

(5 × 2 = 10 marks)

Part C (Short Answer Questions)

*Answer any eight questions.
Each question carries 5 marks.*

19. Explain the classical definition of probability.
20. An urn contains 4 balls. 2 balls are drawn at random and are found to be white. What is the probability that all the balls are white.
21. Fit a Poisson distribution to the following data and calculate the theoretical frequencies :

X	0	1	2	3	4
F	123	59	14	3	1

22. Explain the Central limit theorem.
23. Explain the sampling distribution of mean.
24. In a sample of 400 students of U.G. and P.G. classes was taken to know their opinion about autonomous colleges. 290 of UG and 310 of PG students favoured the autonomous status. Test at 5% level of significance on the opinion regarding autonomous status of colleges is independent of the level of classes of the students.
25. Explain the procedure of testing of hypothesis.
26. Explain the properties of a good estimator.
27. A subcommittee of 6 members is selected at random from the 15 members of a committee, 10 of whom are men and 5 women. Find the probability that the subcommittee (i) includes exactly 5 men ; (ii) includes at least two women.
28. Explain the method of maximum likelihood.
29. Using the following data estimate the production function for the year 1999, by the method of least squares :

Year	1990	1992	1994	1996	1998
Production (10000)	18	21	23	27	16

Turn over

30. The mean life of the sample of 100 electric bulb produced by a company is found to be 1570 hours with a standard deviation of 120 hours. Test the hypothesis that the average life of the bulb is 1600 hours, using the level of 0.05.
31. Explain the properties of binomial distribution.

(8 × 5 = 40 marks)

Part D (Essay Type Questions)*Answer any two questions.**Each question carries 10 marks.*

32. a) State the probability distribution function of Standard Normal Variate.
- b) The mean weight of 500 male students at a certain college is 151 lbs and the standard deviation is 15 lbs. assuming that the weights are normally distributed, find how many students weigh
- (i) Between 120 lbs and 155 lbs.
- (ii) More than 185 lbs.

33. The series (a) shows the frequencies of a distribution ; and (b) the frequencies of normal distribution having the same mean, standard deviation and total frequency as in $a \rightarrow$

(a)	1	12	66	220	495	792	924	792	495	220	66	12	1
(b)	2	15	66	210	484	799	944	799	484	210	66	15	2

Apply χ^2 -test of goodness of fit.

34. a) Explain joint, marginal and conditional probability functions.
- b) Let X and Y be two random variable taking values – 1, 0 and 1 and having the joint probability distribution as given :

Y ↓	X →	- 1	0	1
- 1		0	0.1	0.1
0		0.2	0.2	0.2
1		0	0.1	0.1

Obtain the marginal probability.

Distribution of X and Y and hence expected values.

35. A farmer applies 3 types of fertilisers on 4 separate plots. The figures on yield per acre are tabulated.

Fertilisers	Yield				Total
	A	B	C	D	
Nitrogen	6	4	8	6	24
Potash	7	6	6	9	28
Phosphate	8	5	10	9	32
Total	21	15	24	24	84

Test whether 3 fertilisers make any material differences in yield.

(2 × 10 = 20 marks)

SECOND SEMESTER P.G. DEGREE EXAMINATION, APRIL 2020

(CCSS)

Financial Economics

FEC 2C 06—MACROECONOMICS : THEORY AND POLICY

(2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A*Answer all questions.**Each question carries 1 mark.*

Multiple choice questions :

1. Permanent income hypothesis was developed by _____.
 - a) Friedman.
 - b) Keynes.
 - c) Modigliani.
 - d) Marshall.
 - e) None.
2. Change in consumption to change in income is _____.
 - a) APC.
 - b) MPC.
 - c) Accelerator.
 - d) None.
3. Robert Lucas is associated with _____ school of economics.
 - a) New classical.
 - b) Classical.
 - c) Keynesians.
 - d) None.
4. Fluctuations in economic activities refers to _____.
 - a) Inflation.
 - b) Deflation.
 - c) Business cycle.
 - d) None.
5. Notional demand was developed by _____.
 - a) Walras.
 - b) Clower.
 - c) Lucas.
 - d) None.
6. Relationship between tax rate and tax revenue depicted curve is called _____.
 - a) Laffer curve.
 - b) Dual decision hypothesis.
 - c) Stagflation.
 - d) None.

Turn over

7. Menu cost is related to _____.
- a) New Keynesian economics. b) Classical.
c) New classical. d) None.
8. Transitory income is related to _____.
- a) Permanent income hypothesis. b) Life-cycle hypothesis.
c) Relative income hypothesis. d) None.
9. Supply creates its own demand is _____.
- a) Says law of market. b) Classical dichotomy.
c) Wage price flexibility. d) None.
10. Relation between cost of capital and rate of return is _____.
- a) Q-ratio of investment. b) Accelerator.
c) Multiplier. d) None.

(10 × 1 = 10 marks)

Part B (Very Short Answer Questions)

Answer any five questions.

Each question carries 2 marks.

Answer in one or two sentences each.

11. Explain inflationary gap.
12. Discuss cost-push inflation.
13. Explain long run Philips curve.
14. Explain the phases of business cycle.
15. Explain adaptive expectation.
16. Evaluate Laffer curve.
17. Explain the types of unemployment.
18. Discuss Keynesian theory of inflation.

(5 × 2 = 10 marks)

Part C (Short Answer Questions)

Answer any eight questions.

Each question carries 5 marks.

19. Explain features of new classical macroeconomics.
20. Explain features of supply side economics.

21. Explain Neo Keynesian quantity constrained model.
22. Explain Factors affecting consumption.
23. Explain Types of investment.
24. Explain Neoclassical theory of investment.
25. Explain Classical theory of inflation.
26. Explain Philips curve.
27. Explain Unemployment and under employment.
28. Explain Natural rate of unemployment hypothesis.
29. Explain Innovation theory by Schumpeter.
30. Explain Political business cycle theory.
31. Explain Current global recession.

(8 × 5 = 40 marks)

Part D (Essay Type Questions)

Answer any two questions.

Each question carries 10 marks.

32. Explain new Keynesian economics.
33. Explain Theories of consumption.
34. Explain Accelerator theory of investment.
35. Explain Keynesian theory of inflation.

(2 × 10 = 20 marks)

SECOND SEMESTER P.G. DEGREE EXAMINATION, APRIL 2021

(CCSS)

Financial Economics

FEC 2C 07—STATISTICS FOR ECONOMICS

(2019 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A

*Answer all questions.
Each question carries 1 mark.*

1. If $A = \{1, 2, 3\}$ and $B = \{3, 4, 6\}$, then $A \cap B =$ _____.
(a) $\{ \}$. (b) $\{1, 2, 3, 4, 6\}$.
(c) $\{1, 2\}$. (d) $\{3\}$.
2. The total number of ways of selecting 2 balls from a box containing 4 balls is _____.
(a) 4. (b) 6.
(c) 8. (d) 12.
3. The mean of a binomial distribution with parameter n and p is _____.
(a) np . (b) np^2 .
(c) $np(1-p)$. (d) p .
4. If X is distributed as Poisson with mean 2, its variance is _____.
(a) $\sqrt{2}$. (b) 2.
(c) 4. (d) 1.
5. If X is a normally distributed random variable, X^2 will be distributed as _____.
(a) t . (b) χ^2 .
(c) F . (d) Normal.
6. An unbiased estimator with least variance is said to be _____.
(a) Sufficient. (b) Consistent.
(c) Most efficient. (d) None of these.
7. If for a test, the probability of type II error is 0.02, its power is _____.
(a) 0.01. (b) 0.04.
(c) 0.08. (d) 0.98.

Turn over

8. Which statistic is used for testing independence of attributes ?
- (a) t . (b) χ^2 .
 (c) F. (d) None of these.
9. Analysis of variance is based on _____ test.
- (a) F. (b) χ^2 .
 (c) Z. (d) t .
10. The degrees of freedom for error in a one-way classified data with a total of n observations and k levels of factor is _____.
- (a) $k - 1$. (b) $n - 1$.
 (c) $n - k$. (d) $n + 1$.

(10 × 1 = 10 marks)

Part B (Very Short Answer Questions)

*Answer any five questions.
 Each question carries 2 marks.
 Answer in one or two sentences each*

11. What is the classical definition of probability ?
12. State and prove addition theorem on expectation in a bivariate case.
13. Define probability mass function.
14. Write down the probability density function of an exponential random variable with parameter θ . What is its mean ?
15. What do you mean by a sampling distribution ? Give an example.
16. Distinguish between parameter and statistic.
17. Define significance level and power of a test.
18. Name any two non-parametric tests.

(5 × 2 = 10 marks)

Part C (Short Answer Questions)

*Answer any eight questions.
 Each question carries 5 marks.*

19. State and prove addition theorem of probability for two events.
20. State the three axioms of probability.
21. Define raw and central moments.
22. An unbiased coin is tossed 5 times. What is the probability of getting ?
- (a) Exactly two heads.
 (b) At least 1 head.

23. Explain weak law of large numbers.
24. Define a discrete random variable. Give an example.
25. Distinguish between point estimation and interval estimation.
26. Let 6, 9, 10, 3 be a random sample from $N(\mu, 2)$. Suggest an unbiased estimator for μ . What is its standard error?
27. What are the assumptions of a t test?
28. A sample of 1000 persons was selected randomly from a city. In the sample, there were 580 males. Does this information support the view that the number of males and females are equal?
29. As part of a survey, the opinion of a randomly selected group regarding promotion of government employees was collected. The question of interest was whether promotion should be based on efficiency of the employee. The data was then categorised according to the gender of respondents and the following table was obtained.

Gender		Opinion	
		Yes	No
Male	Male	25	12
	Female	17	26

Do the data indicate that opinion and gender are independent?

30. What are the assumptions of ANOVA?

(8 × 5 = 40 marks)

Part D

*Answer any two questions.
Each question carries 10 marks.*

31. (a) State and prove Baye's theorem.
- (b) There are three boxes B_1 , B_2 and B_3 each having 50 screws. These boxes have 10%, 20% and 30% defective items respectively. A person first chooses a box randomly and then selects a screw randomly from the selected box. If it is found to be defective, what is the probability that it has come from the first box?
32. Explain the following methods of estimation :
- (a) Method of least squares.
- (b) Method of maximum likelihood.

Turn over

33. A die was thrown 60 times and the frequency of each face was noted as given below :

Face Shown	1	2	3	4	5	6
Frequency	10	12	7	13	9	9

Test whether the die was unbiased.

34. The following table gives the increase in the number of sales with three marketing strategies.

Strategy 1	5	8	4	3	6
Strategy 2	2	4	3		
Strategy 3	10	11	20	12	

Test whether the three strategies are equally effective in increasing sales (take $\alpha = .05$)

(2 × 10 = 20 marks)

SECOND SEMESTER P.G. DEGREE EXAMINATION, APRIL 2021

(CCSS)

Financial Economics

FEC 2C 07—STATISTICS FOR FINANCIAL ECONOMICS

(2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A

*Answer all questions.
Each question carries 1 mark.*

Multiple Choice questions :

1. The normal curve is :
 - (a) Bimodal.
 - (b) Trimodal.
 - (c) Unimodal.
 - (d) Multimodal.
2. Variance of a binomial distribution is :
 - (a) np .
 - (b) m .
 - (c) pq .
 - (d) npq .
3. The technique of ANOVA was developed by :
 - (a) R.A. Fisher.
 - (b) Snedecore.
 - (c) Pearson.
 - (d) Gosset.
4. The co-efficient of skewness of a normal distribution is :
 - (a) 1.
 - (b) σ^2 .
 - (c) 0.
 - (d) -1 .
5. The axiomatic definition of probability was introduced by :
 - (a) Fisher.
 - (b) Von Mises.
 - (c) Bernouli.
 - (d) Kolmogorov.
6. If one card is drawn from a pack of 52, what is the probability that it is probability that it is a either a King or Queen ?
 - (a) $2/13$.
 - (b) $4/52$.
 - (c) $16/52$.
 - (d) $8/104$.

Turn over

7. Random variable is a :
- (a) Deterministic variable. (b) Stochastic Variable.
 (c) Non-Stochastic Variable. (d) None of the above.
8. The variance of poisson distribution is :
- (a) \sqrt{m} . (b) m^2 .
 (c) m . (d) m^{-1} .
9. Chi-square test is a :
- (a) Small sample test. (b) Parametric test.
 (c) Non-parametric test. (d) Variance ratio test.
10. The variance ratio test is :
- (a) t -test. (b) F-test.
 (c) ANOVA. (d) Chi-square.

(10 × 1 = 10 marks)

Part B (Very Short Answer Questions)

*Answer any five questions.
 Each question carries 2 marks.*

11. Explain the axiomatic definition of probability.
12. What is the conditional probability ?
13. Explain the procedure for fitting the binomial distribution.
14. What are the significance of normal distribution ?
15. Distinguish between null and alternative hypothesis.
16. Distinguish between mutually exclusive and disjoint events.
17. Write down the importance of Poisson distribution.
18. What is interval estimation ?

(5 × 2 = 10 marks)

Part C (Short Answer Questions)

*Answer any eight questions.
 Each question carries 5 marks.*

1. State the Bayes' theorem.
2. A company has two plants to manufacture scooters. Plant I manufactures 80 % of the scooters and plant II manufactures 20 %. In Plant I, only 85 out of 100 scooters are considered as standard quality. In Plant II only 65 out of 100 scooters are considered as standard quality. What is the probability that a scooter selected at random from plant I, if it is known that it is a standard quality.

3. Write down the importance of normal distribution.
4. Explain the area property of normal distribution.
5. What are the utilities of standard error ?
6. In a random sample of 1,000 persons from City A, 510 were found to be consumers of cigarettes. In another sample, 800 persons from City B, 480 were found to be consumers of cigarettes.
Does the data reveal the significant difference between the two cities so far as the proportion of cigarettes in concerned.
7. The prices of shares of a company on different days in a month were found to be 66, 65, 69, 70, 69, 71, 70, 63, 64 and 68. Discuss whether the price of the shares be 65.
8. In a random sample of size 100 has mean 15, the population variance being 25, find an interval estimate of the population mean with a confidence level of 99 % and 95 %.
9. Explain the uses of Chi-square test.
10. In a sample of 8 observations, the sum of squared deviation of items from the mean was 84.4. In another sample of 10 observations, the value was found to be 102.6 test whether the difference is significant.
11. Briefly explain the procedure of ANOVA in one way classification.
12. Suppose that a manufactured product has two defects per unit of products inspected. Using poisson distribution, calculate the probabilities of finding a product without any defect, three defect and four defect, $e^{-2} = 0.135$.
13. Write a note on the properties of binomial distribution.

(8 × 5 = 40 marks)

Part D (Essay Type questions)*Answer any two questions.**Each question carries 10 marks.*

14. The following data shows the number of units of production per day turned out by 5 different workers using four different types of machines

Machines

<i>Workers</i>	A	B	C	D
1	44	38	47	36
2	46	40	52	43
3	34	36	44	32
4	43	38	46	33
5	38	42	49	39

- (a) Test whether the mean productivity is the same for the different machine types.
- (b) Test whether the 5 men differ with respect to mean productivity.

Turn over

- 15 A firm selling 4 products is interested in finding out whether the sales are distributed similarly among 4 general classes of customers. A random sample of 400 sales records gives the following information

<i>Customers group</i>	<i>Products</i>				
	1	2	3	4	<i>Total</i>
Partners	25	10	30	15	80
Factory workers	32	20	10	28	90
Business men	35	48	25	40	148
Professionals	28	32	15	17	82
Total	120	100	80	100	400

Formulate the suitable hypothesis and apply the Chi-square test.

16. The data for the promotion status and academic qualifications regarding 100 employees of a company is as follows :

<i>Promotion status</i>	<i>Academic qualifications</i>		
	MBA	Non- MBA	Total
Promoted	12	48	60
Non-promoted	18	22	40

At random one employee is picked up. What is the probability that

- (i) He is an MBA ;
 - (ii) He is promoted ;
 - (iii) He is promoted given that he is an MBA ; and
 - (iv) He is an MBA given that he is promoted.
17. A project yields an average cash flow of Rs. 500 lakh with a standard deviation of Rs. 60 lakh. Calculate the following probabilities.
- (i) Cash flow in the more than Rs. 560 lakhs.
 - (ii) Cash flow will be less than Rs. 420 lakhs.
 - (iii) Cash flow will be between Rs. 460 lakhs and Rs. 540 Lakh.
 - (iv) Cash flow will be more than Rs. 680 lakhs.

(2 × 10 = 20 marks)