



WEST BENGAL STATE UNIVERSITY
B.Com. Honours 6th Semester Examination, 2021

FACADSE10T-B.COM. (DSE3/4)

RURAL MARKETING AND INTERNATIONAL MARKETING

Time Allotted: 2 Hours

Full Marks: 50

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.*

GROUP-A

Answer any five questions from the following

2×5 = 10

1. Define the term "Rural Marketing".
2. What is Agricultural Marketing?
3. Mention the full form of EPRG framework.
4. What do you mean by International product life cycle?
5. Define standardization.
6. Define the term "International Marketing".
7. What are the different types of Cooperative marketing?
8. Give the idea of Internationalization.
9. Define the term "Cooperative Marketing".
10. What do you mean by adaptation?
11. What is meant by letter of credit?
12. Define legal environment of marketing.
13. What is Air-way Bill?
14. Define the term "Domestic Marketing".
15. What do you mean by Documentation?
16. Define political environment of marketing.

GROUP-B

Answer any four questions from the following

5×4 = 20

17. Discuss the principal factors affecting pricing.
18. Distinguish between standardization and adaptation.
19. Write short note on different types of rural products.
20. Distinguish between domestic and international marketing.
21. Mention the characteristics of culture.
22. Distinguish between Rural Marketing and Urban Marketing.
23. Explain the process of Internationalization.

24. Discuss the role of Government in marketing agricultural products.
25. Enunciate different types of Cooperative marketing.
26. What is the difference between ethnocentrism and polycentricism?
27. Bring out the problems of Agricultural Marketing in India.
28. Elaborate the structure of cooperatives.

GROUP-C

Answer any two questions from the following

10×2 = 20

29. Explain influence of social class on consumption decisions.
30. Discuss in brief the different dimension of dumping.
31. Write a note on International product life cycle.
32. Mention the importance of certificate of origin and bill of lading in Documentation.
33. Discuss the problems faced by rural marketers in India.
34. Explain the promotion strategies in International Marketing.
35. Discuss the factors influencing buying pattern of rural consumers.
36. Enumerate the current trends in Rural Marketing in India.

N.B. : *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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WEST BENGAL STATE UNIVERSITY
B.Sc. Programme 6th Semester Examination, 2021

MTMGDSE03T-MATHEMATICS (DSE2)
NUMERICAL METHODS

Time Allotted: 2 Hours

Full Marks: 50

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.*

Answer Question No. 1 and any five from the rest

1. Answer any *five* questions from the following: 2×5 = 10
- (a) Construct a linear interpolation for $f(x)$ with $f(1) = 3$ and $f(2) = -5$.
- (b) Compute $\int_0^4 2x^3 dx$, by Simpson's $\frac{1}{3}$ formula and comment on the result.
- (c) Derive an iteration formula for computing $\sqrt[3]{a}$, using Newton Raphson method.
- (d) What is the condition of convergency of Gauss-Jacobi iteration to solve the system of n linear equations? Is this condition both necessary and sufficient?
- (e) Show that the equation $x^2 + \ln x = 0$ has exactly one root in the interval $\left[\frac{1}{3}, 1\right]$.
- (f) If 0.667 be an approximate value of $\frac{2}{3}$, find the percentage error.
- (g) What do you mean by Numerical Differentiation?
- (h) Show that $\Delta^2 \cos 2x = 4 \cos 2x$ where interval of differencing is $\frac{\pi}{2}$.
- (i) Define the terms absolute and relative errors.
2. Explain the Newton-Raphson method for computing a simple real root of an equation $f(x) = 0$. When does the method fail? Can we apply this method to the equation $x^2 - x + \frac{1}{4} = 0$? Justify your answer. 4+1+1+2
3. (a) In order to find the root of $x^3 - x - 1 = 0$, near $x = 1$ which of the following iteration functions give convergent sequences: 2+2
- (i) $x = \frac{x+1}{x^2}$ (ii) $x = \sqrt{\frac{x+1}{x}}$
- (b) Apply the method of bisection to find a real root up to two significant digits of the equation $x^3 - 3x - 5 = 0$. 4

4. (a) Use Lagrange's interpolation to find the value of $f(x)$ for $x = 0.4$ using the table. 5

x	0.3	0.5	0.6
$f(x)$	0.61	0.69	0.72

- (b) Find $\Delta^4 f(x)$, where $f(x) = (3x+2)(x-2)(x+1)(5x-1)$ and the interval of differencing is unity. 3

5. What is interpolation? Deduce Newton's forward difference interpolation formula without error term. 8

6. (a) Given the following table: 2+3

x	0	5	10	15	20
$f(x)$	1.0	1.6	3.8	8.2	15.4

Construct the difference table and compute $f'(20)$.

- (b) If $f(x) = ax$, show that $(E + E^{-1})f(x) = 2f(x)$. 3

7. (a) Calculate $\int_1^2 (x + \frac{1}{x}) dx$ up to four significant figures by Simpson's $\frac{1}{3}$ rule taking 4 intervals. 4

- (b) Obtain trapezoidal rule for numerical integration without the error term. 4

8. Solve the system of equations by LU decomposition method: 8

$$3x + 4y + 2z = 15, \quad 5x + 2y + z = 18, \quad 2x + 3y + 2z = 10$$

9. Deduce Lagrange's interpolation formula and also prove that Lagrangian functions are invariant under linear transformation. 8

- 10.(a) For any positive integer k , show that 4

$$\nabla^k y_n = \sum_{i=0}^k (-1)^i \binom{k}{i} y_{n-i}$$

∇ being the backward difference operator.

- (b) What do you mean by 'round off' errors in numerical data? Show how these errors are propagated in a difference table. 4

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WEST BENGAL STATE UNIVERSITY
B.A. Programme 6th Semester Examination, 2021

HISGDSE04T-HISTORY (DSE2)

SOME ASPECTS OF EUROPEAN HISTORY C. 1780-1839 CE

Time Allotted: 2 Hours

Full Marks: 50

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Candidates should answer in their own words
and adhere to the word limit as practicable.*

*প্রান্তিক সীমার মধ্যস্থ সংখ্যাটি পূর্ণমান নির্দেশ করে।
পরীক্ষার্থীরা নিজের ভাষায় যথা সম্ভব শব্দসীমার মধ্যে
উত্তর করিবে।*

GROUP-A

বিভাগ-ক

1. Answer any **ten** questions from the following: (word limit 30) 2×10 = 20
নিম্নলিখিত যে-কোনো **দশটি** প্রশ্নের উত্তর দাওঃ (শব্দসীমা ৩০)
- (a) When did the French Revolution occur? Who was the king of France during the Revolution?
ফরাসী বিপ্লব কখন হয়েছিল? তখন ফরাসী সম্রাট কে ছিলেন?
- (b) Who was Robespierre?
রোবসপিয়ার কে ছিলেন?
- (c) What was the guillotine?
গিলোটিন কী?
- (d) When was the Treaty of Tilsit signed and between whom?
টিলসিটের চুক্তি কবে, কাদের মধ্যে স্বাক্ষরিত হয়েছিল?
- (e) Who established the Bank of France and when?
কে, কবে ব্যাংক অফ ফ্রান্স প্রতিষ্ঠা করেছিলেন?
- (f) What was the Concordat?
কনকরড্যাট কী?
- (g) What were the three principles of Vienna Settlement?
ভিয়েনা সম্মেলনের তিনটি নীতি কী ছিল?
- (h) Who was the initiator of the Concert of Europe? When was it formed?
কে ইউরোপের শক্তি সমবায়ের উদ্যোক্তা ছিলেন? কবে এটি গঠিত হয়েছিল?

(i) Who emancipated the serfs of Russia and when?

কে, কবে রাশিয়ার ভূমিদাসদের মুক্ত করেছিলেন ?

(j) Between whom and when was the Battle of Sedan fought?

সেডানের যুদ্ধ কবে, কাদের মধ্যে হয়েছিল ?

(k) Name two Utopian Socialists.

দুজন কল্পনাশ্রয়ী সমাজতান্ত্রিকের নাম লেখ।

(l) When did the First World War break out?

প্রথম বিশ্বযুদ্ধ কবে শুরু হয়েছিল ?

(m) Who founded the Fascist Party and when?

কে, কবে ফ্যাসিস্ট পার্টি প্রতিষ্ঠা করেন ?

(n) Who wrote 'Mein Kampf' and when?

কে, কখন, 'মেইন কাম্ফ' রচনা করেছিলেন ?

(o) What was the Rome-Berlin-Tokyo Axis?

রোম-বার্লিন-টোকিও অক্ষচুক্তি কি ?

GROUP-B

বিভাগ-খ

Answer any *two* questions from the following (word limit 250)

5×2 = 10

নিম্নলিখিত যে-কোনো দুটি প্রশ্নের উত্তর দাও (শব্দসীমা ২৫০)

2. Who were the Physiocrats?

ফিজিওক্র্যাট কারা ছিলেন ?

3. Discuss the causes of the Crimean War (1854).

ক্রিমিয়ার যুদ্ধের (১৮৫৪) কারণগুলি আলোচনা করো।

4. What were the objectives of Cavour?

কাভ্যুরের উদ্দেশ্যগুলি কী ছিল ?

5. Discuss the background of the Bolshevik Revolution of 1917.

১৯১৭ সালের বলশেভিক বিপ্লবের পটভূমি আলোচনা করো।

6. What were the reasons for the rise of Fascism before the Second World War?

দ্বিতীয় বিশ্বযুদ্ধের আগে ফ্যাসিবাদের উত্থানের কারণগুলি কী ছিল ?

GROUP-C

বিভাগ-গ

Answer any two questions from the following (word limit 500)

10×2 = 20

নিম্নলিখিত যে-কোনো দুটি প্রশ্নের উত্তর দাও (শব্দসীমা ৫০০)

7. Analyze the contribution of the philosophers to the French Revolution. 10
ফরাসি বিপ্লবে দার্শনিকদের ভূমিকা আলোচনা করো।
8. How far was the Continental system responsible for Napoleon's decline? 10
নেপোলিয়নের পতনের জন্য মহাদেশীয় অবরোধ ব্যবস্থা কতটা দায়ী ছিল ?
9. What was the Metternich System? Why did it fail? 5+5
মেটারনিক ব্যবস্থা কী ছিল? এটি কেন ব্যর্থ হয়েছিল ?
10. How did Bismarck unify Germany? 10
বিসমার্ক কীভাবে জার্মানিকে ঐক্যবদ্ধ করেছিলেন ?
11. What were the causes of the First World War? 10
প্রথম বিশ্বযুদ্ধের কারণগুলি কী ছিল ?

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WEST BENGAL STATE UNIVERSITY
B.Sc. Programme 6th Semester Examination, 2021

MTMGDSE04T-MATHEMATICS (DSE2)

LINEAR PROGRAMMING

Time Allotted: 2 Hours

Full Marks: 50

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Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.*

Answer Question No. 1 and any five from the rest

1. Answer any *five* questions from the following: 2×5 = 10
- (a) Find the extreme points of the following convex set $S = \{(x, y) : y^2 \leq 4x\}$.
- (b) Find a supporting hyperplane of the convex set
 $S = \{(x, y) : x + 2y \leq 4, 3x + y \leq 6, x \geq 0, y \geq 0\}$
- (c) In the following equations find the basic solution with x_3 as the non-basic variable.
- $$x_1 + 4x_2 - x_3 = 3$$
- $$5x_1 + 2x_2 + 3x_3 = 4$$
- (d) Is $(2, 0)$ a feasible solution of the following LPP?
- Maximize $Z = x_1 + 3x_2$
 Subject to $3x_1 + 6x_2 \leq 8$
 $5x_1 + 2x_2 \leq 10$
 $x_1, x_2 \geq 0$
- (e) Write the following problem in a standard form:
- Maximize $Z = x_1 + x_2 + x_3$
 Subject to $|x_1 - x_2 + x_3| \leq 2$
 $x_1 - x_2 - x_3 = 3$
 $x_1, x_2, x_3 \geq 0$
- (f) When a basic solution is said to be degenerated?
- (g) A hyperplane is given by $x + 3y + 2z = 9$. In which half spaces the points $(1, 2, 4)$ and $(-3, 1, -5)$ lie?
- (h) Give an example of a non-convex set. Explain why it is non-convex.

(i) Find the number of basic feasible solution of the following LPP:

$$\text{Maximize } Z = 2x_1 + 3x_2$$

$$\text{Subject to } x_1 + x_2 \geq 2$$

$$x_1 - x_2 \leq 1$$

$$x_1, x_2 \geq 0$$

2. (a) Find all basic feasible solution of the following system of equations. 4

$$x_1 + x_2 - x_3 = 2,$$

$$2x_1 + x_2 - x_3 = 3$$

(b) Show that (1, 2, 1) is a feasible solution of the system of equations. 4

$$x_1 - x_2 + 2x_3 = 1$$

$$x_1 + 2x_2 - x_3 = 4$$

$$x_1, x_2, x_3 \geq 0$$

Reduce the feasible solution to a basic feasible solution.

3. (a) Solve: 4

$$\text{Maximize } Z = 2x_1 - 3x_2$$

$$\text{Subject to } x_1 + x_2 \leq 2$$

$$2x_1 + 2x_2 \geq 8$$

$$x_1, x_2 \geq 0$$

(b) Food X contains 6 units of vitamin A and 7 units of vitamin B per gram and costs 12 p./gm. Food Y contains 8 units of vitamin A and 12 units of vitamin B per gram and costs 20 p./gm. The daily requirements of vitamin A and B are at least 100 units and 120 units respectively. Formulate the above as an L.P.P. to minimize the cost. 4

4. (a) If the feasible region of a linear programming problem is strictly bounded and contains a finite number of extreme points then prove that the objective function of the linear programming problem assumes its optimal value at an extreme point of the convex set of feasible solutions. 4

(b) Show that the feasible solution $x_1 = 1, x_2 = 1, x_3 = 0, x_4 = 2$ to the system 4

$$x_1 + x_2 + x_3 = 2$$

$$x_1 + x_2 - 3x_3 = 2$$

$$2x_1 + 4x_2 + 3x_3 - x_4 = 4$$

$$x_1, x_2, x_3, x_4 \geq 0$$

is not basic.

5. (a) Prove that the set of all convex combinations of a finite number of points is a convex set. 5

- (b) Give an example of 3
- (i) Convex hulls in E^2 and E^3
- (ii) Convex polyhedron in E^2
- (iii) Simplex in zero and one dimension.
6. (a) Prove that in a linear programming problem the optimal hyperplane is a supporting hyperplane to the convex set of feasible solution. 4
- (b) Find a supporting hyperplane passing through $(7, -1)$ of the convex set $X = \{(x_1, x_2) : x_1^2 + x_2^2 \leq 25\}$. 4
7. Solve the following L.P.P. using duality theory. 8
- Maximize $Z = 4x_1 + 3x_2$
- Subject to $x_1 \leq 6$
- $x_2 \leq 8$
- $x_1 + x_2 \leq 7$
- $3x_1 + x_2 \leq 15$
- $-x_2 \leq 1$
- $x_1, x_2 \geq 0$
8. (a) Solve by Charnes Big M-method the following L.P.P. 6
- Minimize $Z = 4x_1 + 2x_2$
- Subject to $3x_1 + x_2 \geq 27$
- $x_1 + x_2 \geq 21$
- $x_1 + 2x_2 \geq 30$
- $x_1, x_2 \geq 0$
- (b) Discuss whether the set of points $(0, 0), (0, 1), (1, 0), (1, 1)$ on the xy -plane is a convex set or not. 2
9. (a) Given the L.P.P. 5
- Maximize $Z = 2x_1 + 3x_2 + 4x_3$
- Subject to $x_1 - 5x_2 + 3x_3 = 7$
- $2x_1 - 5x_2 \leq 3$
- $3x_2 - x_3 \geq 5$
- $x_1, x_2 \geq 0$
- x_3 is unrestricted in sign. Formulate the dual of the L.P.P.
- (b) Prove that if any variable of the primal problem be unrestricted in sign, then the corresponding constraint of the dual will be equality. 3

10.(a) If for a basic feasible solution x_B of a linear programming problem maximize $z = cx$, subject to $Ax = b$ and $x \geq 0$, we have $z_j - c_j \geq 0$ for every column a_j of A , then prove that x_B is an optimal solution. 5

(b) Check whether $x = 5$, $y = 0$, $z = -1$ is a basic solution of the system of equations. 3

$$x + 2y + z = 4,$$

$$2x + y + 5z = 5$$

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WEST BENGAL STATE UNIVERSITY
B.Com. Programme 6th Semester Examination, 2021

FACGDSE10T-B.COM. (DSE2)

RURAL MARKETING AND INTERNATIONAL MARKETING

Time Allotted: 2 Hours

Full Marks: 50

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.*

1. Answer any **five** questions from the following: 2×5 = 10
- What is Rural Marketing?
 - Mention two characteristics of rural markets.
 - What do you mean by International product life cycle?
 - Give an idea of Transfer Pricing.
 - Define International Marketing.
 - Discuss two advantages of International Marketing.
 - What are the different types of Co-operative marketing?
 - Define Cooperative Marketing.
 - Define legal environment of marketing.
 - What do you mean by adaptation?
 - What is meant by letter of credit?
 - What is Attitude in relation to rural customers?
 - Define Domestic Marketing.
 - What do you mean by Documentation in relation to international marketing?
 - Define international branding.
 - Briefly explain EPRG framework.
2. Answer any **four** questions from the following: 5×4 = 20
- Discuss the factors affecting pricing in rural markets.
 - Write a short note on non-tariff barriers.
 - Write short note on different types of rural products.
 - Distinguish between domestic and international marketing.
 - Mention the characteristics of culture with reference to international marketing.

- (f) Distinguish between Rural Marketing and Urban Marketing.
- (g) Write a short note on WTO.
- (h) Discuss the role of Government in marketing agricultural products.
- (i) Mention about the different types of Co-operative marketing.
- (j) Write short notes on EPRG framework.
- (k) Discuss the problems of Agricultural Marketing in India.
- (l) Briefly explain the process of exporting in International business.

3. Answer any *two* questions from the following:

10×2 = 20

- (a) Explain the current trends in rural markets in India.
- (b) Discuss the International pricing methods with special reference to transfer pricing and dumping.
- (c) Explain the phases of International product life cycle.
- (d) Mention the importance of certificate of origin, bill of lading in Documentation.
- (e) “Rural markets suffer from a variety of constraints.”– Explain these constraints and suggest measures for overcoming them.
- (f) Explain the promotion strategies in International Marketing.
- (g) Discuss the factors influencing rural consumer.
- (h) Explain the methods of entry into foreign markets.

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