



UNIVERSITY OF NORTH BENGAL
BBA Minor 3rd Semester Examination, 2025

BBAHMIN303-BBA

BUSINESS MATHEMATICS WITH CALCULUS

Time Allotted: 2 Hours 30 Minutes

Full Marks: 60

The figures in the margin indicate full marks.

GROUP-A

Answer any *two* questions

12×2 = 24

1. (a) If one root of the quadratic equation $ax^2 + bx + c = 0$ be square of the other, show that $b^3 + a^2c + ac^2 - 3abc = 0$. 6+6
- (b) Find the first order and the second order partial derivatives of $u = 2x^2 + 4xy + 5y^2$.
2. (a) Find the equation of the straight line passing through the point (2, 1) and parallel to the line joining the points (2, 3) and (3, -1). 6+6
- (b) Integrate: $\int e^x x^2 dx$
3. (a) Solve the following system of equation by matrix inverse method. 6+6
- $$\begin{aligned} x + y + z &= 6 \\ x + 2y + 3z &= 14 \\ -x + y - z &= -2 \end{aligned}$$
- (b) A machine depreciates at the rate of 10% of its value at the beginning of a year. The machine was purchased for Rs. 5,810 and the scrap value realised when sold was Rs. 2,250. Find the number of years the machine was used.
4. (a) If $y = x^3 \log \frac{1}{x}$, prove that $x \frac{d^2y}{dx^2} - 2 \frac{dy}{dx} + 3x^2 = 0$. 6+6
- (b) A monopolist demand curve is given by $P = 100 - 2q$. Find the marginal revenue function. Find the relationship between the slope of the average revenue and marginal revenue curves. At what price is marginal revenue zero?

GROUP-B

5. Answer any *four* questions: 6×4 = 24
- (a) If $x = 2^{2/3} + 2^{1/3} + 1$, show that $x^3 - 3x^2 - 3x - 1 = 0$. 6

- (b) If $a^2 + b^2 = 7ab$, show that $2\log(a+b) = \log a + \log b + 2\log 3$. 6
- (c) A person buys 20 kg of rice, 10 kg of aata, 5 kg of pulses, 4 kg of sugar and 2 kg of salt for 4 months. Rice costs Rs. 16 per kg, aata costs Rs. 15 per kg, pulses cost Rs. 35 per kg, sugar costs Rs. 21 per kg and salt costs Rs. 8 per kg. Using matrix multiplication, find the amount of money spent by the person. 6
- (d) The compound interest on a certain sum of money for two years is Rs. 920.25 and the simple interest is Rs. 900. Find the sum and the rate of interest. 6
- (e) Evaluate: $\lim_{x \rightarrow 0} \frac{\sqrt{1+2x} - \sqrt{1-3x}}{x}$ 6
- (f) If $x^m y^n = (x+y)^{m+n}$, show that $\frac{dy}{dx} = \frac{y}{x}$. 6

GROUP-C

6. Answer any **four** questions: 3×4 = 12
- (a) Integrate: $I = \int \sqrt{5x+7} dx$ 3
- (b) Find $\frac{dy}{dx}$, using 1st principles of $y = \log x$. 3
- (c) Express $5x - 7y + 11 = 0$ in intercept form and find the intercepts on the two co-ordinate axes. 3
- (d) A person borrows Rs. 20,000 at 3% compound interest and agrees to repay both principal and interest in 10 equal instalments paying at the end of each year. Find the amount of each instalment. 3
- (e) If $A = \begin{bmatrix} 1 & 2 & 0 \\ 3 & -1 & 4 \end{bmatrix}$ find (i) AA^T , (ii) $A^T A$. 3
- (f) Evaluate: $I = \int_1^2 xe^x dx$ 3

— x —



UNIVERSITY OF NORTH BENGAL
SEC 3rd Semester Examination, 2025

SEC - POOCSEC334-COMMERCE

ENTREPRENEURSHIP DEVELOPMENT & STARTUPS

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

GROUP-A / বিভাগ-ক / সমূহ-ক

1. Answer any *five* questions: 1×5 = 5
যে-কোন *পাঁচটি* প্রশ্নের উত্তর দাওঃ
কুর্নৈ *পাঁচ* প্রশ্নকা উত্তর লেখ্নুহোস্ —
- (a) What is meant by creative behaviour?
সৃজনশীল আচরণ বলতে কী বোঝায় ?
সৃজনাत्मক ব্যবহার भनेको के हो ?
- (b) Define intrapreneurship.
ইন্ট্রাপ্রেনিউरशिप-এর সংজ্ঞা দাও।
इन्ट्राप्रेनरशिपलाई परिभाषित गर्नुहोस्।
- (c) What do you mean by Self-Help Group?
स्वनिर्भर गौठी (Self-Help Group) বলতে তুমি কী বোঝো ?
स्व-सहायता समूह भन्नाले के बुझ्नुहुन्छ ?
- (d) What is appraisal of project report?
প্রকল্প রিপোর্ট-এর মূল্যায়ন (appraisal) বলতে তুমি কী বোঝো ?
परियोजना प्रतिवेदनको मूल्याङ्कन भनेको के हो ?
- (e) What is meant by Start-Ups?
স্টার্ট-আপস (Start-Ups) বলতে তুমি কী বোঝো ?
स्टार्ट अप्स भन्नाले के बुझ्नुहुन्छ ?
- (f) Who are known as Angel Investors?
এঞ্জেল ইনভেস্টর (Angel Investors) নামে কারা পরিচিত ?
एन्जेल लगानीकर्ताको रूपमा कसलाई चिनिन्छ ?
- (g) What is seed fund?
সিড ফান্ড (seed fund) কী ?
सिड फन्ड भनेको के हो ?
- (h) What is Crowd Funding?
ক্রাউড ফান্ডিং (Crowd Funding) কী ?
क्राउडफन्डिङ भनेको के हो ?

GROUP-B / বিভাগ-খ / সমূহ-খ

2. Answer any *three* questions: 5×3 = 15
যে-কোন *তিনটি* প্রশ্নের উত্তর দাওঃ
কুর্নৈ *তিন* প্রশ্নকা উত্তর লেখ্নুহোস্ —
- (a) Is an entrepreneurship a solution to society's problems? Discuss. 5
একটি উদ্যোগ কি সমাজের সমস্যার সমাধান ? আলোচনা কর।



‘समानो मन्त्रः समितिः समानी’

UNIVERSITY OF NORTH BENGAL
AEC 3rd Semester Examination, 2025

AEC - ENGLAEC001-ALTERNATIVE ENGLISH

LITERARY APPLICATION

Time Allotted: 2 Hours 30 Minutes

Full Marks: 60

The figures in the margin indicate full marks.

1. Answer any **three** of the following questions: 15×3 = 45
- (a) Comment on the role and character of Maurya in *Riders to the Sea*.
- OR**
- (b) Comment on the title of *Riders to the Sea*.
- (c) How does Gatsby’s character represent the American dream?
- OR**
- (d) Discuss the narrative technique of *The Great Gatsby*.
- (e) Examine *The Man-Eater of Malgudi* as a social novel.
- OR**
- (f) Comment on the character of Vasu in *The Man-Eater of Malgudi*.
2. Answer any **three** of the following questions: 5×3 = 15
- (a) Why is Bartley determined to go to Connemara?
- (b) What does the sea represent in J. M. Synge’s *Riders to the Sea*?
- (c) How does Nick Carraway first meet Jay Gatsby?
- (d) Why did Daisy marry Tom?
- (e) What role does Rangi play in *The Man-Eater of Malgudi*?
- (f) Briefly describe Nataraj’s profession.

—x—

B**IDC - COMMIDC325-HUMAN RESOURCE MANAGEMENT**

Time Allotted: 1 Hour 30 Minutes

Full Marks: 40

*The figures in the margin indicate full marks.***Instruction**

The candidate should indicate the correct Name, Centre Name, Roll Number, Registration No., Course/Paper Code, Question Booklet Series, Question Booklet SET on the OMR Answer-Sheet otherwise the Answer-Sheet will not be evaluated and the candidate will be solely responsible for it.

Each question has four alternative answers. The candidate has to darken only one circle/bubble on the Answer-Sheet using black/blue ballpoint pen indicating the correct answer as shown below. If more than one answer / option is found darkened, then the question will be treated wrong and will not be evaluated.

Example: Correct Method: Wrong Method:

Answer all the questions

1×40 = 40

- Which of the following is considered a Managerial Function of a Human Resource Manager?
 - Recruitment and Selection
 - Compensation Management
 - Directing
 - Performance Appraisal
- A Human Resource Information System (HRIS) is primarily beneficial because it
 - Eliminates the need for a separate HR department
 - Allows to outsource recruitment activities
 - Automates routine administrative tasks and provides real-time data for decision-making
 - Replaces line managers in performance appraisal
- Which of the following is NOT a primary goal of the Human Resource Planning (HRP) process?
 - Ensuring optimal utilization of existing human resources
 - Designing a new production process
 - Anticipating new skills needed
 - Forecasting future labour demand and supply
- A key output of Job Analysis that focuses on the minimum acceptable qualifications of an employee is the
 - Job Evaluation
 - Job Specification
 - Job Description
 - Job Redesign
- What is the positive process of searching for prospective employees and encouraging them to apply for jobs in the organisation?
 - Screening
 - Induction
 - Selection
 - Recruitment

6. A major advantage of using Internal Sources of recruitment is
 - (A) It increases employee morale and loyalty
 - (B) It introduces new blood and ideas into the organisation
 - (C) It increases the cost of recruitment and training
 - (D) It leads to shortage of people at the entry level
7. The process of Selection is primarily concerned with
 - (A) Choosing the right candidate from the pool of applicants
 - (B) Introducing the new employee to the workplace
 - (C) Determining the skills needed for a job
 - (D) Creating a large pool of applicants
8. A key step in the HRP process is Manpower Forecasting. This involves
 - (A) Assessing the current skills of employees only
 - (B) Developing a detailed plan for employee compensation
 - (C) Determining the training budget
 - (D) Estimating the number and type of personnel required in the future
9. The document that provides a statement of the duties, responsibilities and reporting relationships of a job is called the
 - (A) Job Evaluation Report
 - (B) Career Development Plan
 - (C) Job Description
 - (D) Job Specification
10. The major DISADVANTAGE of external sources of recruitment is
 - (A) The reliability and validity of the candidates' information are higher
 - (B) The chances of dissatisfaction among existing employees decrease
 - (C) It provides a wide choice and the opportunity for 'new blood'
 - (D) The selection process is more complex, time-consuming and expensive
11. The final stage in the formal selection process is typically the
 - (A) Reference and Background Checks
 - (B) Job offer and contract of employment
 - (C) Employment Tests
 - (D) Preliminary Interview and Screening
12. The difference between Training and Development is primarily that
 - (A) Training focuses on the future, while Development focuses on the present job
 - (B) Training is a narrow concept, while Development is a broad concept focusing on the employee's personality and potential
 - (C) Training is for managers, while Development is for non-managers
 - (D) Training is always expensive, while Development is always cost-free
13. Which of the following is an example of an On-the-Job Training (OJT) method?
 - (A) Job Instruction Training (JIT)
 - (B) Lecture Method
 - (C) Role Playing
 - (D) Vestibule Training
14. Which of the following describes the key purpose of Career Development?
 - (A) To align an individual's career goals with the organisation's future manpower requirements
 - (B) To focus exclusively on improving skills for the employee's current job
 - (C) To administer disciplinary action for non-performance
 - (D) To reduce employee compensation and benefits

15. Which training method is most suitable for developing strong interpersonal and decision-making skills in a group of managers?
(A) Job Instruction Training (JIT) (B) Programmed Instruction
(C) Management Games and case studies (D) Lecture Method
16. The performance appraisal process is essentially designed to achieve which two main objectives?
(A) Administrative Decisions (e.g. salary, promotion) and Employee Development
(B) Job Redesign and HRIS Implementation
(C) Recruitment and selection
(D) Cost Reduction and Product Quality Improvement
17. Which modern performance appraisal technique typically involves evaluation input from the manager, subordinates, peers and the employee themselves?
(A) Critical Incident Method (B) Forced Choice Method
(C) 360-Degree Feedback (D) Assessment Centre
18. Fringe Benefits are primarily provided by the employer to
(A) Increase the base salary of the employee
(B) Attract, retain and motivate employees by enhancing their overall well-being and security
(C) Calculate the correct amount of income tax deduction
(D) Only reward high-performing employees
19. The HRM function of Maintenance is primarily concerned with
(A) Ensuring a supply of qualified employees through recruitment
(B) Determining the relative worth of jobs through job evaluation
(C) Protecting employee's physical and psychological health, safety and welfare
(D) Improving employee skills and knowledge through training
20. The concept of Social Security for employees is essentially a system designed to
(A) Only provide a bonus at the time of retirement
(B) Regulate union-management relationships in the factory
(C) Provide free travel-passes to all employees
(D) Ensure that employees have protection against certain risks like sickness, unemployment, or old age
21. The major goal of a formal grievance redressal procedure is to
(A) Resolve employee dissatisfaction quickly and fairly at the lowest possible level
(B) Eliminate the need for collective bargaining
(C) Increase the complexity of the employee handbook
(D) Punish the employee who filed the complaint
22. Which principle is essential for ensuring a successful employee health and safety program?
(A) Top management commitment and active employee participation
(B) Making safety the sole responsibility of the safety officer
(C) Ignoring minor safety violations to maintain employee morale
(D) Focusing only on accident statistics and not on preventive measures

23. Which of the following is an example of a Retirement Benefit that falls under social security benefits?
- (A) Paid Sick Leave (B) Canteen Subsidies
(C) Performance Bonus (D) Provident Fund (PF) Contribution
24. In the context of Grievance Redressal, what is the term for a third-party intervention where the third party gives a final and binding decision?
- (A) Mediation (B) Conciliation (C) Negotiation (D) Arbitration
25. The scope of HRM is comprehensive and includes which of the following areas?
- (A) Financial Accounting and Auditing
(B) Product design and Inventory control
(C) Personnel, Welfare and Industrial Relations
(D) Marketing Strategy and Sales Promotion
26. The purpose of human resource planning (HRP) is to balance the firm's
- (A) Assets and Liabilities
(B) Training budget and compensation packages
(C) Current and future demand for human resources with the existing and projected supply
(D) Production targets and Sales volume
27. The main focus of a performance appraisal interview is to
- (A) Justify the annual budget for the HR department
(B) Engage in a two-way communication to review performance, provide feedback and set goals for future improvement
(C) Compare the employee's performance with their peers performance
(D) Only deliver the final rating and announce the salary increment
28. What is the primary objective of any compensation policy in an organisation?
- (A) To eliminate the need for any fringe benefits
(B) To ensure compliance with the company's dress code policy
(C) To provide fair, equitable and competitive remuneration to employees to attract, motivate and retain them
(D) To minimise the cost of the wage bill
29. The law in India that deals with health, safety and welfare of workers in manufacturing units is the
- (A) Industrial Disputes Act
(B) Payment of Wages Act
(C) Employee's Provident Funds and Miscellaneous Provisions Act
(D) Factories Act
30. The social security measure that provides medical benefit, sickness benefit and maternity benefit to insured employees in India is the
- (A) Minimum Wages Act, 1948
(B) Payment of Gratuity Act, 1972
(C) Employees' State Insurance (ESI) Act, 1948
(D) Employees' Provident Funds and Miscellaneous Provisions Act, 1952

31. The primary focus of Employee Welfare facilities, as a function of HRM, is to
(A) Ensure that the company hires skilled workers only
(B) Compensate employees based on their performance
(C) Improve the quality of life of the employees and their families by providing facilities and amenities
(D) Reduce the wage payment to the workers
32. In the context of HRM, Social Security benefits are typically provided to cover the risks of
(A) Loss of earning capacity due to maternity, old age and employment injury
(B) Dissatisfaction with the immediate supervisor
(C) High annual inflation
(D) Failure to achieve annual performance targets
33. If a company finds that its current employees lack the advanced technical skills needed for an upcoming project, the HRM function that addresses this is
(A) Maintenance (Safety) (B) Training
(C) Compensation (D) Recruitment
34. In the context of the Halsey Premium Plan, if a worker saves 4 hours on a job with a standard time of 10 hours and an hourly rate of ₹20, what is the worker's total earning (assuming a 50% sharing ratio)?
(A) ₹120 (B) ₹140 (C) ₹160 (D) ₹180
35. Which of the following is a development function objective of HRM?
(A) To prepare employees for higher responsibilities and future challenges
(B) To ensure employee safety and prevent accidents
(C) To fix a competitive market wage for the job
(D) To maintain employee records and administer payroll
36. The systematic organised process by which the organisation matches the internal supply (current employees) with the future demand for manpower is called
(A) Performance Appraisal (B) Job Analysis
(C) Human Resource Planning (D) Job Evaluation
37. Which type of recruitment source is an example of advertisements placed on a company's own internal bulletin board or intranet?
(A) External Source: Media Advertising (B) Internal Source: Job Posting and Bidding
(C) Internal Source: Employee Referrals (D) External Source: Educational Institutions
38. The fundamental principle of an effective grievance redressal procedure is
(A) Immediate suspension of the employee involved in the complaint
(B) Allowing only verbal complaints without any written record
(C) Finalising the decision at the top-most level of management
(D) A written, time-bound and multi-step process for fair investigation and resolution
39. The concept of Fringe Benefits falls under which of the operating functions of HRM?
(A) Compensation and Maintenance (B) Acquisition
(C) Development (D) Integration

40. The three key components that define the overall compensation package are
- (A) Base pay, Incentives and Fringe Benefits
 - (B) Job Description, Job Specification and Job Evaluation
 - (C) Health, Safety and Welfare
 - (D) Recruitment, Training and Selection

ইংরেজি প্রশ্ন দেখ
অংরেজী प्रश्न देखनुहोस्

—x—