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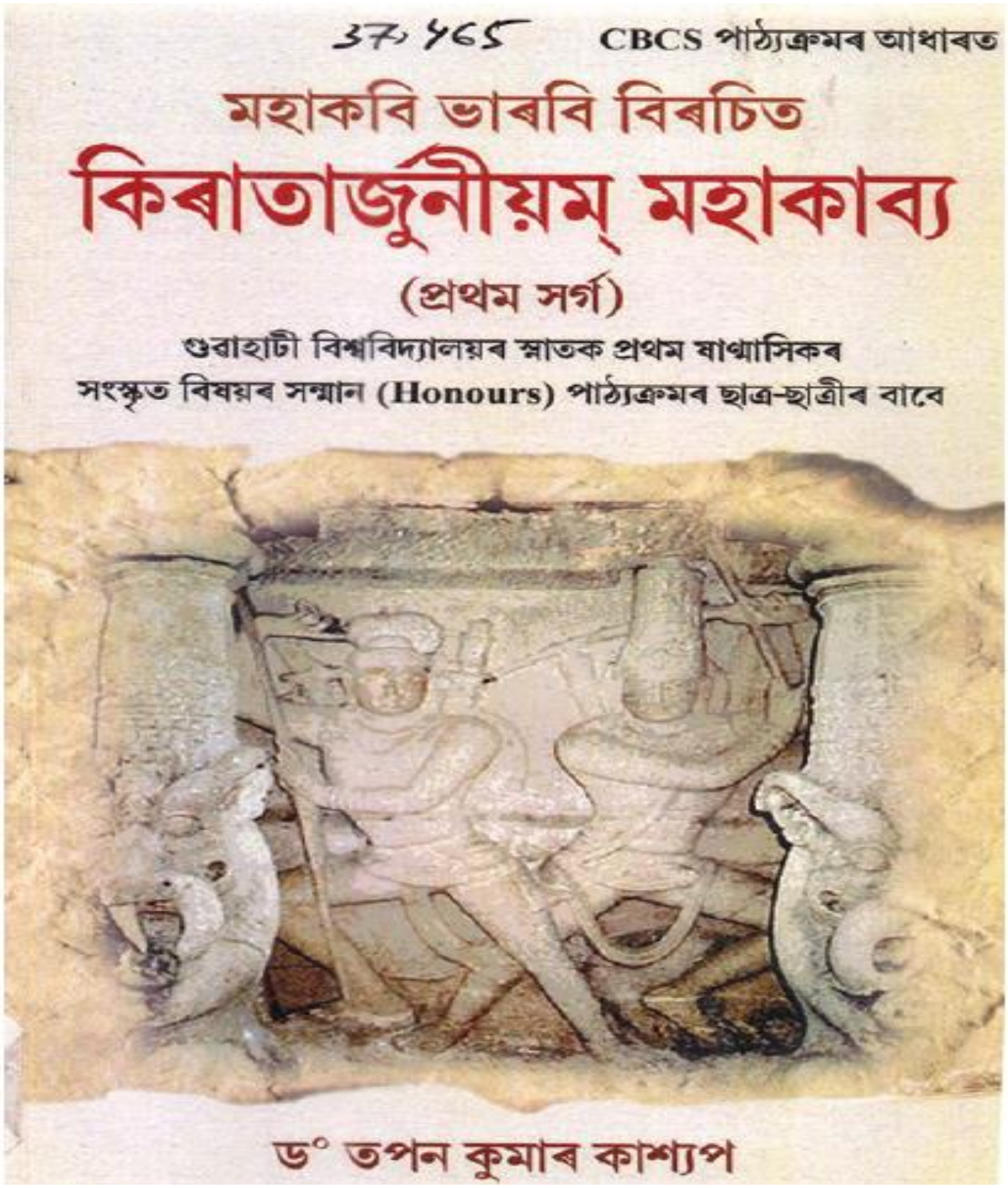

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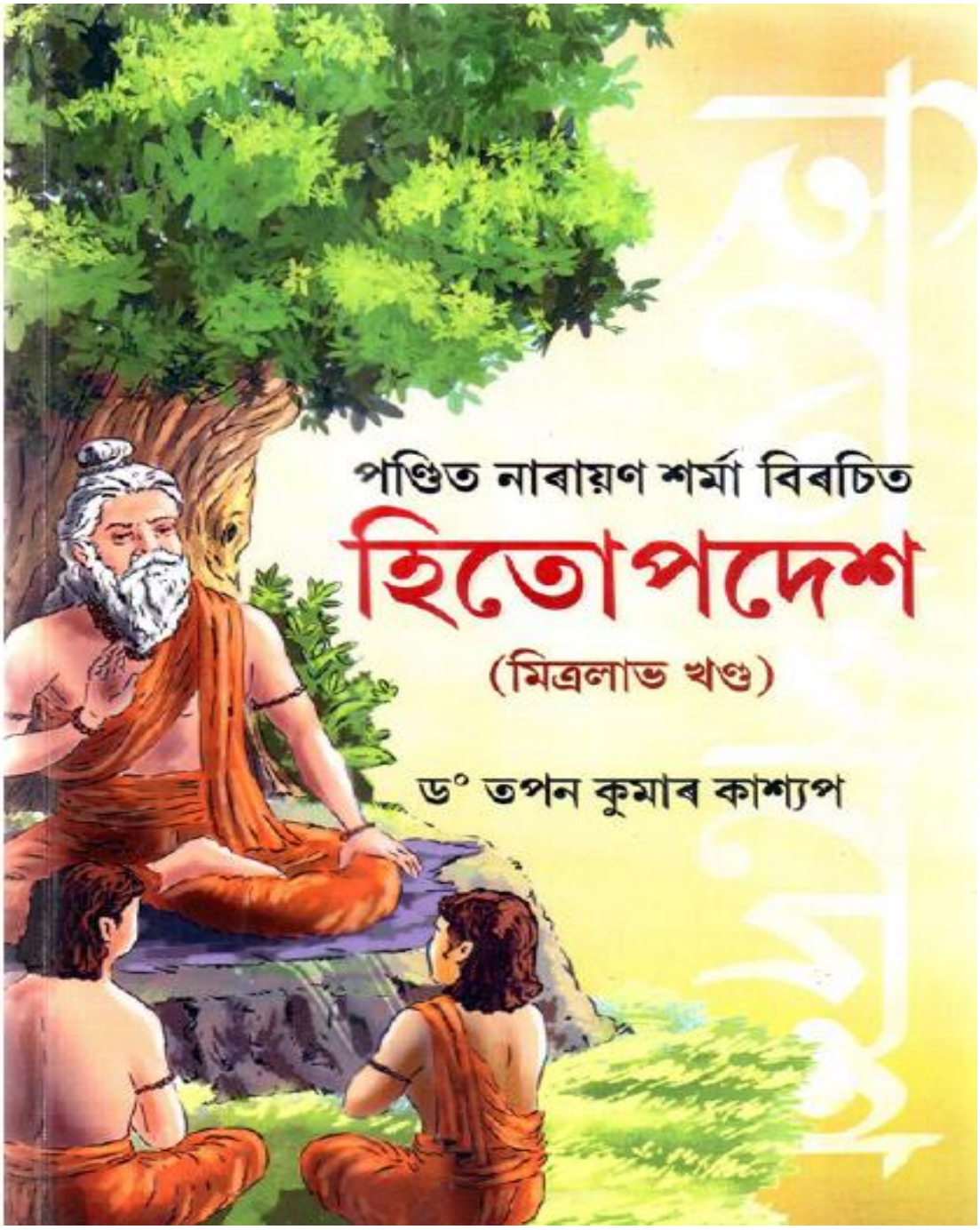

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Dr.Tapan Kumar kashyap

মহাকবি কলিদাসৰ কুমাৰসম্ভৱ মহাকাব্যৰ সাহিত্যিক সমালোচনা

ড° তপন কুমাৰ কাশ্যপ

সাৰাংশ ঃ

লৌকিক সংস্কৃতবিদসকলৰ ভিতৰত মহাকবি কালিদাস 'কবিকুলগুৰু' পৰিভাষাৰে বিভূষিত। তেওঁৰ দ্বাৰা বিৰচিত 'কুমাৰসম্ভৱ' মহাকাব্যখন সংস্কৃত মহাকাব্যসমূহৰ ভিতৰত অন্যতম মহাৰত্নৰূপে বিৰাজিত। তেওঁৰ জীৱনৰ গভীৰ উপলব্ধি আৰু ঈশ্বৰ প্ৰদত্ত গুণৰাজিৰদ্বাৰা সৃষ্ট 'কুমাৰসম্ভৱ' আজিও সংস্কৃত সাহিত্যৰ স্তম্ভস্বৰূপ। তাৰকাসুৰক বধৰ নিমিত্তে শিৱ আৰু পাৰ্বতীৰ ঔৰসত কাৰ্ত্তিকৰ জন্ম-বৃত্তান্তই এই মহাকাব্যৰ মূল বিষয়বস্তু। ইয়াত কবিগৰাকীয়ে সকলো চৰিত্ৰ স্বৰ্গীয় অথবা দিব্যৰূপত উদ্ভাসিত কৰিছে। কাব্যখনিত জীৱন্তৰূপত উপলব্ধ হিমালয়ৰ সৌন্দৰ্য্য আৰু ঐশ্বৰ্য্যই কবিগৰাকীৰ অসাধাৰণ বৰ্ণনা শক্তিৰ গুণৰ বিষয়ে অনুধাৱন কৰিব পাৰি। তেওঁ চৰিত্ৰ-চিত্ৰণতো সিদ্ধহস্ত। এই কাব্যখনিত কবিগৰাকীয়ে ভাৰতীয় দৰ্শন তত্ত্বৰো উল্লেখ কৰিছে। তেওঁৰ কাব্যৰ মূল অলংকাৰ হৈছে প্ৰাকৃতিক দৃশ্যৰ মনোমোহা বৰ্ণনা। তেওঁ বাহ্য আৰু অন্তঃ প্ৰকৃতিৰ মিলনেৰে নিজৰ প্ৰকৃতি বৰ্ণনাক অতি সুন্দৰ, কল্পনাতীত আৰু গভীৰতা প্ৰদান কৰিছে। কালিদাসৰ প্ৰকৃতি বৰ্ণনাত সকলোতে প্ৰেম বিদ্যমান। প্ৰেমেই হৈছে তেওঁৰ প্ৰকৃতিৰ প্ৰাণ। তেওঁ অলংকাৰ প্ৰয়োগতো সিদ্ধহস্ত। তেওঁ উপমা অলংকাৰেৰে প্ৰখ্যাত। কোৱা হয়— 'উপমা কালিদাসস্য'। সেয়েহে নিম্নোক্ত লিখনিত কালিদাসৰ কুমাৰসম্ভৱ মহাকাব্যৰ ওপৰত এক সাহিত্যিক সমালোচনাৰে দৃষ্টিপাত কৰিবলৈ প্ৰয়াস কৰা হৈছে।

এই লিখনিত বৰ্ণনামূলক আৰু বিশ্লেষণাত্মক পদ্ধতি প্ৰয়োগ কৰা হৈছে। ইয়াত মুখ্য আৰু গৌণ - দুয়োটা উৎসৰপৰা বিষয়বস্তু সংগ্ৰহ কৰা হৈছে।

মূল শব্দ ঃ প্ৰকৃতি, উপমা, ৰস।

আৰম্ভণি ঃ

"পুৰা কবীনাং গণনা প্ৰসংগে কনিষ্ঠিকাধিষ্ঠিত কালিদাসা।
অদ্যাপি তত্তুল্যকবেৰভাৱাৎ অনামিকা সাৰ্থৱতী বভূৱ।"

লৌকিক সংস্কৃত সাহিত্যজগতত কালিদাস যে সকলো কবিৰ ভিতৰত শ্ৰেষ্ঠ তথা অপ্ৰতিদ্বন্দ্বী সেই কথাকে উদ্ধৃত শ্লোকটিৰ দৰে আৰু অসংখ্য প্ৰশংসা বাণীয়ে উদ্‌ঘোষিত কৰে। সংস্কৃত কাব্যজগতত "কবিকুলগুৰু" আখ্যাৰে বিভূষিত মহাকবি কালিদাসে স্বকীয় কাব্যকৃতিৰ অনবদ্য সম্পদৰাজিৰে সঁচাকৈয়ে সকলো কবিকে অতিক্ৰম কৰিছে। তেওঁৰ কাব্য প্ৰতিভা সাৰ্বজনীনভাৱে প্ৰাচ্য আৰু পাশ্চাত্য সকলো পণ্ডিতে একেমুখে স্বীকাৰ

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3

Behaviour of Nuclear Proximity Potentials Towards the Fusion Sub-barrier Cross Section of $^{16}O + ^{58,62}Ni$ Systems

Nabendu Kumar Deb
K. Kalita

Abstract

Six different versions of nuclear proximity potentials are being applied to see the influence of static quadrupole and hexadecapole deformation of targets and its orientations with collision axis on the fusion cross section. The interaction barrier parameters (barrier height, position and its curvature) for the reactions induced by spherical projectiles ^{16}O on the slightly deformed targets $^{58,62}Ni$ have been estimated from the variations of total interaction potential with the inter-nuclear separation; which is then used in Wong's formula to determine the fusion cross section for the reactions. It is found that the nuclear proximity potential strongly depends on the value of the deformation parameters of the target and its orientation. In this work, the experimental fusion cross-section of the reactions $^{16}O + ^{58}Ni$ and $^{16}O + ^{62}Ni$ are investigated with proximity potentials. The fusion cross-sections obtained by Prox 10, Prox 88 and modProx 88 potentials are found out to be in better agreement than Prox 00, Prox 00DP, Prox 77 in comparison to experimental data.

Keywords: *Nuclear Proximity potential, Quadrupole and hexadecapole deformations, Interaction Barrier Parameters, Wong's formula, Target*

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Chapter 8

Study of the effects of orientation and deformation of ^{154}Sm on fusion cross sections using proximity potentials

Nabendu Kumar Deb*, Harun Al Rashid and Kushal Kalita

Department of Physics, Gauhati University, Jalukbari, Guwahati-781014, India

The orientation of the deformed targets in the nuclear fusion reaction influences the fusion cross-section. The effects of static quadrupole and hexadecapole deformation of the target on the fusion cross-section are studied using various proximity potentials available in the literature. The Coulomb interaction barrier parameter for $^{16}O+^{154}Sm$ (deformed target) system is, therefore, estimated in this present work. The potentials are found to depend strongly on the parameters of the deformed target. The fusion cross-section was found by applying parameters of the potentials on Wong's formula. The multi-dimensional BPM was assessed using CCFULL. Cross-sections by Prox 77, Prox 88, Prox 00, Prox 10, Bass 80, CW 76, AW 95 are found to be in better agreement with the experimental data.

Keywords: Nuclear Proximity potential, Interaction Barrier Parameters, Wong's formula, Fusion cross-section

1. Introduction

Heavy ion fusion-fission reactions study around the Coulomb barrier energies is one of the intense topics of research [1]. Such reactions are dramatically influenced by the internal structure and entrance channel parameters such as mass asymmetry and deformation of the interacting nuclei which significantly affect the probability of formation of a compound nucleus (CN) system. For a CN system, the mass flows from the projectile to the target thereby leading to the formation of a compound nucleus which may decay via fission or particle evaporation. For the dinuclear system, the mass flow takes place in a reverse direction, i.e., from the target to the projectile, and will decay before

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7.Nabendu Kr.Deb

Identification of evaporation residues populated through complete and incomplete fusion in ^{16}O + ^{154}Sm system

Rahul Mahato[1], Dharmendra Singh[1*], Amritraj Mahato[1], Nitin Sharma[1], Lupteindu Chhura[1], Rajesh K. Sahoo[1], Pankaj K. Giri[1†], Sneha B. Linda[1], Harish Kumar[2], Suhail A. Tali[2], Rahbar Ali[3], S. Kumar[4], Nabendu K. Deb[5], M. Afzal Ansari[2], R. Kumar[4], S. Muralithar[4], and R.P. Singh[4]

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Introduction

The investigation of heavy-ion induced reactions above the coloumb barrier has been gaining interest in the field of nuclear physics during recent decades [1,2]. It has been observed that when the kinetic energy of the projectile is in the range ≈4-7 MeV/A, there are two dominant reaction mechanisms, namely: complete fusion (CF) and incomplete fusion (ICF) [1-3]. In CF reactions, the energetic projectile fully fuses with the target nucleus, resulting in a highly excited compound nucleus that subsequently decays by emitting low-energy nucleons and alpha particles at an equilibrium stage. Conversely, in the ICF reaction, only a part of the projectile fuses with the target nucleus, while the remaining part continues to move forward with a velocity nearly identical to that of the incident ion beam. The excited composite system may undergo de-excitation by emitting light particles and/or γ-rays. In the present work, an attempt has been made to identify different evaporation residues (ERs) populated via CF and ICF emission channels in ^{16}O + ^{154}Sm system at low projectile energy ≈4-7 MeV/nucleon.

Experimental details

The current experiment was conducted at the Inter-University Accelerator Centre (IUAC), New Delhi, India. In this experiment enriched ^{154}Sm targets (98.69% purity) with a thickness of approximately ≈200-600 μg/cm^2 were utilized. These targets were irradiated by $^{16}O^{5+}$ ion beam within the energy range of E_{Lab} = 69-100 MeV. To measure the Excitation Functions (EFs), the offline stacked foil activation technique had been used. This technique involves irradiation of a single stack consisting of seven samarium target, backed by thick aluminum foils (1.0-2.5 mg/cm^2). This stack was bombarded by the $^{16}O^{5+}$ ion beam within the General Purpose Scattering-Chamber (GPSC) at IUAC, New Delhi. Subsequently, the γ-ray activities generated in various targets and successive catcher foils were recorded by using pre-calibrated High-Purity Germanium (HPGe) detectors. To distinguish different ERs populated in the given system through CF and ICF, we relied on their characteristic γ-rays in the recorded spectrum and also on their decay curve analysis. The efficiency of a High-Purity Germanium (HPGe) detector is an important factor that determines its capability to accurately detect, and measure γ-ray radiation emitted by ERs. The efficiency plot of N-type HPGe detector at distance 2 cm from the ^{152}Eu source has been given in Fig. 1.

Analysis and results

From the present data analysis, two ERs i.e. ^{165}Yb and ^{160}Er have been identified which are populated by 5n and α5n channels respectively in the present system. Characteristic γ-rays for these residues have been taken from Ref. [4]. Using CANDLE software [5] area under the photopeak has been measured. Subsequently, the counts per second for the ERs ^{165}Yb (5n) and ^{160}Er (α5n) at γ-energies ≈ 1090.3 keV and ≈ 826.6 keV

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Nabendu Kr.Deb

Role of Entrance Channel Parameters on α -Break up in Heavy Ion Induced Reactions

Rajesh K. Sahoo[1], Dharmendra Singh[1*], Amritraj Mahato[1], Nitin Sharma[1], Lupteindu Chhura[1], Rahul Mahato[1], Pankaj K. Giri[1†], Sneha B. Linda[1], Harish Kumar[2], Suhail A. Tali[2], Rahbar Ali[3], Sushil Kumar[4], Nabendu Kumar Deb[5], M. Afzal Ansari[2], R. Kumar[6], S. Muralithar[4], and R.P. Singh[4]

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Introduction

In recent years, multiple attempts have been made to understand the dynamical aspects of incomplete fusion (ICF) which is associated with heavy-ion (HI) induced reactions [1-3]. Generally, complete fusion (CF) is anticipated as a dominant contributor to total fusion (TF) cross-section in HI-induced fusion reaction but current findings demonstrated that the ICF has a significant contribution to TF cross-section at energy above the coulomb barrier [1-5]. Hence, it is crucial to establish a unified and coherent framework for understanding the transfer of energy, mass, linear, and angular momentum in nuclear reactions through a comprehensive description of both CF and ICF [6]. From recent investigations [1-5], it is now well established that various entrance channel parameters are required to explain the gross features of ICF dynamics. Further, projectile structure i.e., (α-clustered and non-α clustered) is the important parameter that has a significant impact on ICF dynamics requires in-depth research. Therefore, the systematic study of projectile structure along with various entrance channel parameters like (i) coulomb factor, (ii) projectile Energy, (iii) α -Q value of the projectile, (iv) mass asymmetry, (v) input angular momentum, etc. are required to probe the ICF dynamics.

Experimental Procedure

Measurements were performed using the 15UD Pelletron accelerator facility at the Inter-University Accelerator Centre (IUAC), New Delhi, India. Excitation functions (EFs) of evaporation residues (ERs) populated in the ^{18}O projectile ^{154}Sm target have been measured using stack foil activation technique followed by offline γ-ray spectroscopy. A single stack consisting of seven samarium foils (thickness = 400-600 μg/cm^2) backed by thick aluminium foils (1.0-1.5 mg/cm^2) was bombarded with the ^{18}O ion beam energy 103 MeV in GPSC (General Purpose Scattering-Chamber) at IUAC, New Delhi. After irradiations, the γ-ray activities were recorded using HPGe detector coupled to PC-based software CANDLE [7]. A standard ^{152}Eu γ-ray source was employed to pre-calibrate the detectors for energy and efficiency measurements. To measure the beam flux and to monitor the stability of the beam current during irradiation, a Faraday cup was installed behind the stack. From the characteristic γ-rays, the ERs populated via CF and ICF channels were identified and confirmed through their respective decay profiles.

Analysis and Result

In the present work, EFs of nine ERs populated via CF and/or ICF channels have been measured, out of which two ERs were shown in our previous work [8]. The experimental cross sections of the ERs populated in the ^{18}O+^{154}Sm system are compared with statistical model code PACE-4 [9] which utilizes the Monte Carlo simulation procedure to de-excite the compound nucleus (CN) formed via CF. From the analysis of data, it has been observed that the experimental cross-section of the ERs produced via xn/pxn

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Multi-Nucleon Transfer Reaction Studies on $^{10,11}B+^{40}Ca$ at 50 MeV

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Introduction

Processes in which few nucleons are transferred between projectile and target are one of the dominant reaction channels in heavy ion collisions at energies around Coulomb barrier. Such reactions take place when the surfaces of the colliding nuclei come to distances where the tail of the nuclear wave function starts overlapping thereby, determining the frictional force between the surfaces [1-3]. Single nucleon transfer reaction probes to single particle character of states whereas pairing (p-p, n-n, p-n) or cluster effect can be observed from even number of nucleon transfer reactions [4,5]. Entrance channel properties such as deformation and mass asymmetry affect the formation of compound nucleus (CN) system or a multinuclear system [6,7]. Roy *et al.* has studied transfer reaction for the systems $^{16}O+^{27}Al$, ^{58}Ni, ^{56}Fe (^{12}C, x); x: $^{13,11}C$, $^{11,10}B$, $^{10,9,7}Be$, ^{9}Be and $^{7,6}Li$ which shows significant properties of Q-value dependence on transfer processes [8].

In this paper, we have reported experimental details of the $^{10,11}B+^{40}Ca$ system at energy of 50 MeV in order to study effect of pair transfer on nuclear transfer cross section.

Experimental Details

Experiment was carried out with $^{10,11}B$ beam of 4^+ charge state at incident energy, E_{lab}=50 MeV obtained from Pelletron accelerator facility at Inter University Accelerator Centre (IUAC), New Delhi, India. Carbon backed (thickness 21.5 $\mu g/cm^2$) CaF_2 target of thickness 271.5 $\mu g/cm^2$ was used for this experiment which was fabricated at target laboratory of IUAC. Beam current was maintained at around 3.0 pnA. Four Silicon Surface Barrier (SSB) detector telescopes of ΔE-E (40 μm-300 μm, 15 μm-300 μm, 50 μm-1.5mm, 40 μm-2mm) configuration were mounted on two movable arms of the General Purpose Scattering Chamber (GPSC) of 1.5 m diameter to detect the transfer products.

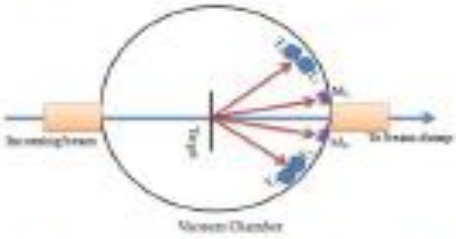

Fig. 1 A schematic diagram of the experimental setup at GPSC.

The angular range covered by detectors was from 18° to 62°. Two monitor detectors (M_1 and M_2) were placed at ±10° on the either side of the beam direction for normalization purpose. A schematic diagram of the experimental arrangement is shown in **Fig. 1.**

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Studies on the fusion reaction dynamics induced by heavy ions around the coulomb barrier

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Fusion cross sections, in heavy ion-induced reactions, at sub-barrier energies are found to be enhanced significantly over the predictions of the one-dimensional barrier penetration model [1,2]. Such observations have been elucidated in terms of static deformations, couplings of inelastic excitations and the positive Q value neutron transfer (PQNT) channels. The coupling with intrinsic degrees of freedom has an effect of changing the height of the barrier. Barriers lower than the one-dimensional Coulomb barrier, will lead to the enhancement of fusion cross sections.

The role of inelastic couplings for the sub-barrier fusion cross section has been well established using theoretical formalism within the coupled-channel (CC) approach. However, the precise effect of transfer channels has been seemingly elusive in many cases. For neutron (neutral particle) transfer, reaction may occur at a very large distance resulting in fusion enhancement. Therefore the PQNT effect on fusion at sub-barrier energies becomes an important topic of present interest. For some systems, the sub-barrier fusion enhancement has been correlated to the presence of PQNT channels however, for many systems having PQNT channels, its role could not be ascertained. Such ambiguous observations suggest that PQNT channels may not be sufficient but is of high importance to illustrate the sub-barrier fusion enhancement. Keeping all this in mind, fusion excitation measurements have been performed for $^{16}O+^{61}Ni$, $^{18}O+^{61,62}Ni$, $^{18}O+^{116}Sn$ systems and, therefore, were reported in this thesis. $^{16}O+^{61}Ni$ possess negative Q values for all the neutron transfer channels. Other systems, considered in this work, possess positive Q value for 2n stripping channel. O, Ni and Sn are all spherical nuclei with the lowest quadrupole and octupole states being collective in nature. ^{18}O has 2n outside the ^{16}O core. The energy of the first 2^+ state of ^{18}O and ^{16}O is 2 MeV and 7 MeV respectively. Also, both $^{61,62}Ni$ possess similar collective strengths, thereby making the experimental signature of transfer couplings noticeable while comparing these O+Ni systems.

Experiments have been performed at the Inter-University Accelerator Centre (IUAC), New Delhi, India using a recoil mass separator, Heavy-Ion Reaction Analyser (HIRA) [3,4]. $^{16,18}O$ beams obtained from 15UD Pelletron accelerator were bombarded on $^{61,62}Ni$, ^{116}Sn targets prepared using physical vapour deposition in the target lab of IUAC [5,6]. The targets were ≈ 100 μg/cm^2, ≈ 150 μg/cm^2 and ≈ 150 μg/cm^2 thick respectively prepared on ≈ 30 μg/cm^2 C-backing. The fusion cross-sections have been determined at different energies by measuring the evaporation residues (ER). The ERs were identified via gating between time of flight (TOF) and corresponding energy loss suffered by the ERs in the cathode of MWPC (ΔE). The ΔE-TOF spectra so obtained for all the systems display the clear separation between ERs and other unwanted beam like particles [3,4].

The fusion cross-sections have been measured for these systems in laboratory energies ranging from ~ 11 - 16% below to ~ 31 - 46% above the barrier energy. In this energy range, the contribution due to fission is found to be negligible. On comparing the measured fusion cross section with the CC calculation using the code CCFULL [3,4], the enhancement could be observed in the sub-barrier region for all these systems compared to that of the simple theoretical predictions. Fig. 1 shows the fusion excitation function for $^{16}O+^{61}Ni$, $^{18}O+^{61,62}Ni$, $^{18}O+^{116}Sn$ systems.

The result of $^{18}O+^{116}Sn$ system was analyzed using CC calculations including various low-lying inelastic excitations and transfer channels [3]. Both ^{18}O and ^{116}Sn were considered as vibrators. Various modes of inelastic

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Fabrication of CaF_2 target for nuclear reaction studies

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Introduction

The production of targets with the requisite uniform thickness and isotopic purity is an enormous problem for researchers while conducting nuclear reaction experiments [1,2]. A suitable target should also have strong tensile strength and seamless adhesion between the film and the substrate in addition to purity [3]. In the target laboratory of the Inter University Accelerator Centre (IUAC), New Delhi, we prepared CaF_2 targets using the vacuum evaporation method, one of many target production procedures.

Preparing a target for calcium (Ca), which is easily oxidized, is particularly challenging. For our nuclear reaction experiment, we employed a thin CaF_2 film that was 180 $\mu g/cm^2$ thick and was supported by a 20 $\mu g/cm^2$ layer of carbon. Because Ca-F bond dissociation energy (527 KJ/mol) is higher than that of Ca-O bond (402 KJ/mol), the likelihood that the CaF_2 thin film target will oxidize is lower.

Experimental Details

Fabrication was carried out in diffusion pump based coating unit (DPU) and turbo pump based coating unit (TPU) in the target development laboratory of IUAC. During evaporation, the vacuum was achieved and maintained in the range of 10^{-7} mbar. DPU is connected with a diffusion pump. It is also equipped with 2KW electron gun and resistive heating arrangement. Liquid nitrogen (LN) trap is also fitted between chamber gate valve and diffusion pump. LN condenses oil molecules of diffusion pump from moving towards the chamber. The evaporator is also equipped with a quartz crystal thickness monitor which provides thickness of deposition along with the rate of evaporation.

The carbon foil was first prepared as part of the target preparation process. A parting agent (in our case, barium chloride ($BaCl_2$)) was first coated on the glass plate using a resistive heating process before carbon was applied to the glass slides. The quartz crystal monitor was placed 21 cm from the copper crucible, while the glass slides were kept 27 cm from the resistive heating setup. After the $BaCl_2$ was successfully deposited, carbon was deposited on the glass slides using the electron gun bombardment method without affecting the chamber's vacuum. The internal stress that might have developed in the carbon slides as a result of the lattice orientation during evaporation or as a result of the adhesive force between evaporated material and substrate material was then removed by annealing the carbon slides in a tubular furnace at 325°C in an Argon gas environment. Finally, the carbon slides were cooled to room temperature to remove the internal stress that had developed in the carbon foils. The next phase involved gently floating carbon slides on warm water to prevent them from breaking. Slides were found to successfully remove the carbon foils from the glass substrate when submerged at 45 degrees. After separation, the foils were placed in target holders. Finally, the target holders were installed within the DPU for the CaF_2 final deposition.

For CaF_2 deposition, pallet of CaF_2 was made using hydraulic press from its powder form and then placed at the tantalum boat mounted inside the DPU. Both the target frame holders and crystal monitor were placed above the resistive heating arrangement approximately at distance of 14 cm. After the arrangement, the

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Theoretical quasi-elastic excitation function and barrier distribution with various diffuseness parameters for $^{16}O+^{116}Sn, ^{176}Yb$

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Introduction

To describe a nuclear collision, the nature of potential between colliding nuclei is important. The potential barrier between the colliding nuclei is created due to repulsive Coulomb force and the short range attractive nuclear interactions. According to Eigen Channel approximation, the potential barrier splits into a distribution of barrier due to the coupling of relative motion of intrinsic degrees of freedom. This nature of potential can be studied by studying the fusion or quasi-elastic scattering (QES) excitation function. The sum of elastic, inelastic and transfer reaction is equal to QES. Fusion is related to transmission probability and QES is related to reflection probability. Fusion barrier distribution (D_{fus}) can be extracted from the fusion excitation function $\sigma(E_{c.m.})$ by taking the second derivative of $E_{c.m.}$, i.e. $d^2(E_{c.m.}\sigma(E_{c.m.}))/dE^2_{c.m.}$. This method was first proposed by Rowley et al. [1]. But QE barrier distribution (Dq) is extracted from the first derivative of the QES excitation function ($d\sigma_q/d\sigma_R$) which is given by $-d(d\sigma_q/d\sigma_R)/dE$. Timmers et al. first proposed this method [2]. σ_q and σ_R are QES cross section and Rutherford scattering cross section. In QES measurement even lesser precise data can be utilized as compared to that of the fusion measurement as in the expression of barrier distribution, fusion has double derivative and QES has single derivative with respect to energy [3]. QES barrier distribution is an important parameter to study the super heavy elements as it carries significant information regarding to it [4]. To such QES excitation function, theoretically, the couple channel calculations can be performed using various combinations of target and projectiles by scattering version of CCFULL [5]. The barrier distribution can be calculated using the method describe above. In the scattering version CCFULL program, nuclear potential has real and imaginary component which is assumed to have Wood-Saxon (WS) form. The parameter associated with the potential can be used to study the various effects. In this paper, an attempt is being made to study the effect of diffuseness parameter and the WS potential parameter in excitation function of $^{16}O+^{116}Sn, ^{176}Yb$ below the Coulomb barrier from energy range of 40-70 MeV and 60-90 MeV respectively at a scattering angle of 150°.

Table 1: Wood-Saxon parameter for $^{16}O+^{116}Sn$

V_0 (Mev)	r_i(fm)	a_i(fm)	W_0 (MeV)	r_i (fm)	a_i (fm)
105	1.1	0.75	30	1.0	0.6
95	1.0	0.65	25	1.2	0.55
80	1.2	0.45	20	1.2	0.4

Results and Discussions

The interaction potential (V) for projectile and target is the sum of the long-range coulomb potential (V_C), centrifugal potential (V_{CEN}) and the short-range nuclear potential (V_N).

$$V = V_C + V_N + V_{CEN}$$

where, $V_C = \begin{cases} \frac{Z_T Z_P e^2}{2r_c}\left(3 - \frac{r^2}{r_c^2}\right) & if\ r \le r_c \\ \frac{Z_T Z_P e^2}{r} & if\ r > r_c \end{cases}$

$$V_N = -\frac{V_0}{\left(1+e^{\frac{r_c - R_i}{a_i}}\right)} - i\frac{W_0}{\left(1+e^{\frac{r_c - R_i}{a_i}}\right)}$$

$$V_{CEN} = l(l+1)\hbar^2/2\mu r$$

Here V_0, W_0, r_i and r_i are the Wood-Saxon potential parameters where as a_r and a_i are the

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Complete and incomplete fusion studies of evaporation residues populated in $^{12}C+^{154}Sm$ system

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Introduction

There has been a growing interest in the study of incomplete fusion (ICF) dynamics because of the complexity of the heavy ion (HI) induced reactions at lower projectile energy. Previous studies have shown that the ICF process significantly contributes to the total fusion cross-section in low energy regime. At low values of impact parameter, the projectile gets completely fused with the target nucleus and complete fusion (CF) occurs. In this process the complete transfer of linear and angular momenta takes place from projectile to target with the evolvement of an excited compound nucleus (CN) which further emits low energy evaporation nucleons followed by γ-rays to acquire its ground state. In contrast, ICF takes place with partial momentum transfer [1,2] and a part of the projectile fuses with the target while the rest part behaves as spectator.

The ICF of the incident projectile particle was first observed by Britt and Quinton [1]. After then this area of research got broadened in respect of various aspects like projectile energy and structure and various entrance channel parameters [3,4,5] namely mass asymmetry, coulomb factor and target deformation etc. An effort has been made to investigate the CF and ICF dynamics by measuring the excitation functions (EFs) of the evaporation residues (ERs) populated in the interaction of ^{12}C projectile and ^{154}Sm target at different beam energies between ~5-8 MeV/A.

Experimental Procedure

The present experiment for the measurement of EFs of the residues populated in system $^{12}C+^{154}Sm$ was performed by our group at the Inter-University Accelerator Centre (IUAC), New Delhi, India. The target foils of ^{154}Sm (enrichment-98.69%) were prepared by vacuum evaporation technique. Eight target-catcher assemblies were set up for the purpose of carrying out experiment by using single projectile beam at different energies. Each ^{154}Sm target foil was backed by thick aluminium (Al) foils to catch the produced ERs. The foils of ^{154}Sm, with a thickness ≈ 250-650 μg/cm^2 were irradiated by beam of $^{12}C^{6+}$ in GPSC (General Purpose Scattering-Chamber) at IUAC, New Delhi. Target irradiation was done at a single energy. Multiple incident energies were achieved due to energy loss of ion beam while traversing through different foils. The offline stacked foil activation technique has been used to measure the EFs. The induced γ-ray activities in various target-catcher foils were recorded by counting them using pre-calibrated high purity germanium (HPGe) detectors, coupled to a CAMAC-based data acquisition system. Energy and efficiency calibration of the HPGe detectors was done by using standard ^{152}Eu γ-ray source. The obtained γ-ray spectra are analysed using the software CANDLE [6] and the residues populated in reaction are identified by characteristic γ-ray of respective ERs and decay curve analysis.

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Breakup fusion of ^{18}O Projectile with ^{154}Sm at energy ≈ 3-7 MeV/nucleon

Rajesh K. Sahoo[1], Dharmendra Singh[1*], Amritraj Mahato[1], Nitin Sharma[1], Jagatjyoti Mohapatra[1], Lupteindu Chhura[1], Rahul Mahato[1], Pankaj K. Giri[1†], Sneha B. Linda[2], Harish Kumar[2], Suhail A. Tali[2], Asif Ali[2], Rahbar Ali[3], Sushil Kumar[4], Nabendu Kumar Deb[5], N.P.M. Sathik[6], M. Afzal Ansari[7], R. Kumar[8], S. Muralithar[4], and R.P. Singh[4]

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Introduction

In recent years, the entanglement of incomplete fusion (ICF) in heavy ion (HI) induced nuclear reactions at projectile energy above the Coulomb barrier has been explored with great interest [1]. Multiple reaction channels may open during the interaction of a heavy ion with the target. Generally, in the vicinity of the barrier, complete fusion (CF) becomes the only contributor to the cross-section of total fusion (TF). However, at higher energies, the ICF process becomes a major contributor to the total fusion cross-section. Therefore, ICF plays a significant role in understanding nuclear reaction dynamics. Enhancement in the fusion cross-sections for α-emitting channels is an important characteristic of ICF. The first experimental evidence of ICF contribution reported [2] in the break-up of incident projectiles. Recent investigations [1,3,4] suggest that various entrance channel parameters have a great impact on ICF dynamics.

Experimental Procedure

The present experiment was carried out by our group at the Inter-University Accelerator Centre (IUAC), New Delhi, India. Enriched Targets of ^{154}Sm (98.69%), with a thickness ≈ 400-600 μg/cm^2 were irradiated by beam of $^{18}O^{5+}$, in the energy range E_{Lab} = 70-104 MeV. The offline stacked foil activation technique has been employed to measure the Excitation Functions (EFs). A single stack consisting of seven samarium foils backed by thick aluminium foils (1.0-1.5 mg/cm^2) was bombarded with the ^{18}O ion beam in GPSC (General Purpose Scattering-Chamber) at IUAC, New Delhi. The γ-ray activities produced in various targets and successive catcher foils were then identified by counting them using HPGe detectors. The detectors used in this experiment were pre-calibrated for energy and efficiency using standard ^{152}Eu γ-ray source. The residues arising from both complete and incomplete fusion were identified from the characteristic γ-rays and following the half-lives of the residues. The Faraday Cup installed behind the target-catcher foil assembly was used to measure the beam flux which is required for the calculation of fusion cross-section and to observe the stability of the current during irradiation.

Analysis and result

The Evaporation Residues (ERs) ^{165}Yb (5n), ^{164}Yb(6n), ^{167}Tm(p4n), ^{166}Tm(p5n), ^{165}Tm(p6n), ^{161}Er(α7n), ^{167}Ho(αp), ^{162}Ho(αp5n), and ^{161}Dy(2α7n) are populated through CF and ICF in the system ^{18}O + ^{154}Sm. Theoretical calculations of EFs for these residues were carried out with the statistical model code PACE-4 [5]. Three ERs i.e., ^{167}Tm(p4n), ^{166}Tm(p5n) and ^{165}Tm(p6n) involving the precursor contribution from ^{167}Yb(5n), ^{166}Yb(6n) and ^{165}Yb(7n) respectively have been observed.

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Study of break-up fusion process in light heavy ion projectile induced reactions

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Introduction

Heavy Ion (HI) induced fusion reactions have been a subject of great interest from the last two decades. These reactions prove to be helpful: in understanding various nuclear astrophysical processes, in exploring the nuclear landscape and hence searching for the heaviest possible chemical element that may exist etc. Depending upon the nature of projectile-target combination and the energy of interacting nuclei, various nuclear reaction processes may occur. However, in the energy region of 4-8 MeV/nucleon using light heavy ion projectiles such as ^{12}C, ^{13}C, ^{16}O, ^{18}O etc., with heavier mass targets, the reaction processes that dominate are complete fusion (CF) and break-up fusion (BUF) [1-3]. As the name suggests, in case of CF, the incident projectile completely merges with the target nucleus, leading to the formation of compound nucleus (CN) in highly excited state. This excited CN then de-excites initially, by emitting light nuclear particles such as neutrons (n), protons (p) and alpha (α) particles, followed by emission of gamma (γ) rays. In case of BUF, which is also termed as incomplete fusion (ICF) or massive transfer reaction, the break-up of incident projectile occurs in the environs of the target nucleus. Further, depending upon the energy of projectile either lighter or heavier fragment of projectile may fuse with the target nucleus, leading to formation of composite system (CS) in excited state. This CS then also de-excites, initially by emitting light nuclear particles followed by γ-rays. In BUF, the un-fused fragment moves in the forward direction as spectator, without having any impact on the reaction, the way it proceeds [1, 2]. To explain the break-up fusion dynamics, various models such as BUF, sum rule, hot spot etc., have been proposed, but none of these models can reproduce the BUF or ICF cross section satisfactorily, below 8 Mev/nucleon [1-3]. To develop a proper theoretical model, the dependence of BUF on various entrance channel parameters, that govern this process have to be studied in a very systematic and careful manner. Various attempts have been made earlier, but to reach the goal there are miles to go. Further, various methods such as excitation function (EF), forward recoil range distribution (FRRD), angular distribution (AD) and spin distribution (SD) have been used to comprehend the BUF process. To have further better understanding of BUF reaction dynamics, we have carried out the EF measurements of various evaporation residues (ERs) populated in ^{12}C + ^{156}Gd system in the energy region of 4-8 MeV/nucleon.

Experimental Details

The experiment was carried out at Inter-University Accelerator Centre (IUAC), New Delhi by using the pelletron accelerator facilities. ^{156}Gd foils of thickness ranging from 0.8-1.5 mg/cm^2 and Al foils (acting as catcher as well as energy degrader) of thickness 1.5-2.0 mg/cm^2 were fabricated at target development laboratory IUAC, by using the rolling technique [4]. For better accuracy, the thickness of both ^{156}Gd foils

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Effect of entrance channel in fission fragment anisotropies for the reactions forming compound nuclei ^{210}Rn and $^{188,190}Pt$

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Introduction

Investigation of angular distribution of fission products is one of the most commonly used method to differentiate fusion-fission and quasifission processes at near barrier energies. In heavy ion collision reactions, the fusion dynamics is strongly influenced by entrance channel properties of the colliding nuclei such as charge product (Z_PZ_T), mass asymmetry (α), deformation of the nuclei (β), collision energy, etc. The direction of the mass flow in the dinuclear system plays a dominant role in the reaction dynamics. It is reported in the literature that for a system with entrance channel mass asymmetry (α) greater than the Businaro-Gallone mass asymmetry (α_{BG}), the mass flow takes place from the projectile to the target leading to the formation of a compound nucleus (CN), which may decay via fission or particle evaporation in any later time. On the other hand, for $\alpha < \alpha_{BG}$, mass flow occurs in the opposite direction and a dinuclear system is formed which will decay before equilibrating in all degrees of freedom, leading to quasifission.

Fission fragment angular distributions of the systems $^{11}B+^{204}Pb$ and $^{18}O+^{197}Au$ (leading to same CN ^{215}Fr), having mass asymmetries that fall on either side of the α_{BG} value show no evidence of quasifission [1], which ruled out the presence of entrance channel effect around coulomb barrier energies. For $^{16}O+^{194}Pt$, $^{24}Mg+^{186}W$ [2] and $^{30}Si+^{180}Hf$ [3] reactions, forming the same CN ^{210}Rn, the variance of mass distribution of the fission fragments found to be larger in later two reactions for which $\alpha < \alpha_{BG}$ implying presence of quasifission. In the recent study, Kavita et al. measured fission fragment mass distribution for CN $^{188,190}Pt$, where they found larger variance in mass distribution for the system with entrance channel mass asymmetry being lesser than α_{BG} value [4]. In this work we have calculated the fission fragment anisotropies as a function of reduced coulomb barrier E_{CM}/V_b for the compound nuclei ^{210}Rn and $^{188,190}Pt$ forming through different entrance channels with the help of standard saddle point statistical model (SSPM) to study the entrance channel effects.

SSPM formalism for angular distribution

According to the standard transition state model (TSM) or standard saddle point statistical model (SSPM), fission fragment angular distributions are characterized by anugular anisotropy (A). The angular anisotropy is defined as the ratio of yield at 0^0 or 180^0 to that at 90^0 and it is given by

$$A = 1 + \frac{< I^2 >}{4K_0^2}$$

where

$$K_0^2 = T \times \frac{I_{eff}}{\hbar^2}$$

and

$$T = \sqrt{\frac{E^*}{a}} = \sqrt{\frac{E_{CM} + Q - B_f - E_{rot} - E_{pre}^{sad}}{a}}$$

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Studies on Elastic Scattering of ^{6}Li + ^{40}Ca Using BDM3Y-Paris and Wood-Saxon Potential

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Introduction

Study of elastic scattering is an important part to understand peripheral heavy ion (HI) interaction. Any nuclear interaction involves nuclear potential along with Coulomb potential and the choice of the nuclear potential reveals a wide variety of phenomenon subjected to the fitting percentage with the experimental data. Highly celebrated optical model (OM) formalism allows us to play with different kind of potentials such as Wood-Saxon (WS), Folding, Proximity etc. In Wood-Saxon formalism at least six parameters are varied in order to analyze elastic scattering data and previous experimental results have showed that WS formalism is very good phenomenological model to study nuclear collision. However, great success of WS formalism is shadowed when interaction is observed with very high energetic beam. Though, any HI interaction can be dissected by considering the aspects such as beam energy, charge, mass etc., however more satisfactory understanding is more probabilistic using nucleon-nucleon (NN) interaction potential. To construct nucleus-nucleus potential, integration is carried out over a NN potential over the whole mass distribution of colliding partners. This approach is known as folding and this method has been widely used to generate real part of the OM potential [1-3]. In this work, we have analyzed elastic cross section of the reaction ^{6}Li+^{40}Ca at energies 20 MeV, 26 MeV, 28 MeV, 30 MeV, 32 MeV and 34 MeV. Data are taken from the website archive of www.nrv.jin.ru [4-8]. Analysis is carried out employing two approaches. In the first approach, real part of the potential is generated using a double folding potential and the imaginary potential is generated using WS potential, whereas in the second approach both real and imaginary nuclear potential is taken to be WS. We obtain unique set of OM parameters from both approaches by comparing the theoretical data with experimental data.

Theoretical background

Nuclear interaction between a pair of nuclei is described by the potential consisting of Coulomb (V_C), nuclear (V_N) and centrifugal potentials which affect the interaction process leading to various elastic and non-elastic processes. The interacting potential is given as

$$V=V_C(r)+V_N(r)+\frac{\hbar^2 l(l+1)}{4\pi^2\mu r^2}$$

where l is the angular momentum quantum number and μ is the reduced mass of the system and r is the inter-nuclear distance. We have used the code the available at the website www.nrv.jinr.ru for analysis of elastic scattering cross sections. We used the M3Y-Paris double folding potential which has the following form [2]

$$v_{00}(r)=\left(11062\frac{e^{-4r}}{4r}-2538\frac{e^{-2.5r}}{2.5r}+F_{00}(E)\delta(r)\right)$$

and the Wood-Saxon potential has the following formalism [3]

$$V_N(r)=\frac{-V_0}{1+\exp\left(\frac{r-R_{0R}}{a_R}\right)}+i\frac{-W_0}{1+\exp\left(\frac{r-R_{0I}}{a_I}\right)}$$

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Fusion suppression on nuclear reaction induced by loosely bound projectiles

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Introduction

Due to the availability of intense beams and the improved experimental facilities in the recent decades, a renewed interest has been developed towards understanding of fusion cross section [1]. In loosely bound projectiles like ^{6,7}Li, ^{9}Be, etc. emanates interesting phenomenon towards fusion reaction as separation energy of these nuclei are low and hence have high chances for breakup. As an instance, ^{6}Li breakup into ^{2}H + ^{4}He and ^{9}Be breaks up into ^{8}He + ^{4}He + n with separation energy 1.48 MeV, 1.67 MeV respectively. The breakup threshold energy in this case is low due to which the breakup probability of this nucleus as a projectile rises and hence forms the basis of numerous experiments. These projectiles directly break up when it is projected with certain energy towards the heavier target nuclei during fusion process. Such occurrences were observed in at least four different types of events: projectile fusing with target without breakup, a case of direct complete fusion (DCF); projectile breaking up into fragments which then later fuses with target, a case of sequential complete fusion (SCF); one of the breakup fragments fusing with target, a case of incomplete fusion (ICF); and none of the breakup products and the target fuse with one another, a case of no capture breakup (NCBU). In such cases, theoretical cross sections are expected to be higher than the corresponding experimental values a phenomenon commonly known as fusion suppression.

Various versions of the classical model are available in the literature to explain the fusion suppression of systems involving weakly bound projectile. Classical trajectory model [1] can easily identify scattering, no-capture breakup and incomplete fusion. It can also be incorporated in the CDCC formalism. Modified version of this model, classical dynamical model [2] developed later could determine the breakup of the projectile by empirically obtaining breakup probability function whose parameters are obtained from sub-barrier no capture breakup measurements. This method could successfully determine the breakup yields and the fusion suppression factors for a number of systems. In this paper, we will present a modified formula in place of the formula used by Phookan et.al [3] for the fusion suppression factor and then apply the same for the reactions ^{6}Li + ^{152}Sm, ^{209}Bi and ^{8}Be + ^{209}B whose fusion excitation data are available in the Refs. [4,5,6] and where fusion suppression is observed.

Theory

The three-body Lagrangian, as shown in equation 1, in two dimensions are constructed for the projectile and the target system with the assumption that the projectile is two-point particles [1]. The Wood-Saxon form of the nuclear potential is used here whose parameters were taken from optical model analysis of the elastic scattering data.

$$L=\frac{1}{2}m_1\left(\dot{q}_1^2+\dot{p}_1^2\right)+\frac{1}{2}m_2\left(\dot{q}_2^2+\dot{p}_2^2\right)+\frac{1}{2}m_3\left(\dot{q}_3^2+\dot{p}_3^2\right)-V \quad (1)$$

And $V = V_{12}+V_{13}+V_{23}$

The detail about the interaction potential is taken from Ref. [2].

Methodology

The difference between theoretical and experimental cross section (Fusion suppression) is due to the fraction of projectile break-up near the heavy target. For large number of trajectories, we define breakup fraction as

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Theoretical analysis of fusion excitation function measurement for $^{18}O + ^{116}Sn$ system

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Introduction

Nuclear fusion cross section around the Coulomb barrier reveals varieties of phenomena. One such phenomenon is the enhancement of the sub-barrier fusion cross section as compared to the theoretical predictions of 1-D barrier penetration model (BPM) [1]. Such enhancement occurs due to the coupling of relative motion to internal degrees of freedom of the colliding nuclei such as deformation [2], vibration [3], nucleon transfer [4] and neck formation [5] between the two interacting nuclei. These couplings often lessen the barrier height by modifying the one dimensional Coulomb barrier into multiple potential barriers which then cause enhancement of fusion cross-sections [6]. With the theoretical models available, these effects of inelastic excitations could be explained reasonably well within the quantum coupled channel (QCC) approach and the empirical coupled channel (ECC) approach [7]. However, the role of the neutron transfer on the heavy ion sub-barrier fusion is still not fully resolved. This is mainly because of the challenges to account for the intricate mechanism of transfer channels in the theoretical models, as the chargeless neutron, unaffected by the Coulomb barrier, can freely flow from one collision partner to the other even at large internuclear distances [8].

Neutron transfer plays a vital role in the enhancement, especially, for the systems having positive Q value of few neutrons transfer, as it causes a considerable shift in the barrier height [9]. A series of studies were done, eventually, to extricate the PQNT effect on the fusion cross section. It has been observed that a large enhancement of fusion cross-section below the uncoupled Coulomb barrier occurred due to neutron transfer channels for some of the fusing systems having positive Q-value for the transfer channel. On the contrary, there are some systems having PQNT channels which do not show any enhancement of the sub barrier fusion cross sections [1]. Recently, fusion excitation function measurement was carried out for the $^{18}O + ^{116}Sn$ system and has been observed that positive Q-value for the neutron transfer channels for this system plays the role behind the enhancement of the sub-barrier fusion cross section [10]. This was evident as in Fig. 1 when it was compared with the similar system [11] having negative Q-value in the reduced scale [9]. Here, in this work, theoretical analysis has been done further using semi-classical approach via ECC model of Zagrabaev et al. [7] to further ascertain the role of neutron transfer.

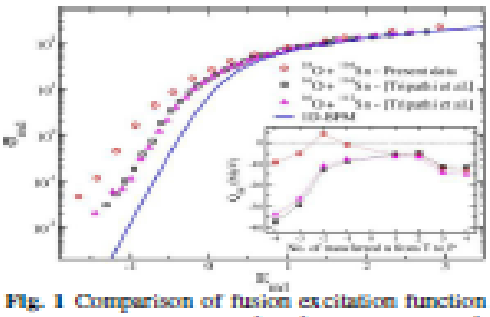

Fig. 1 Comparison of fusion excitation function for similar systems in reduced scales along with their Q-values for various neutron transfer in its inset.

This model includes inelastic as well as multineutron transfer channels for fusion cross-section calculations. In the ECC approach , the neutron rearrangement was consistently incorporated using the semi-classical approximation for the transfer probability [4].

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Study on Morphological Evolution of Ag-nanostructured Films Prepared by Mass-selected Clusters

Barman, Pintu and Deka, Anindita and Bhattacharyya, Satyaranjan (2021) *Study on Morphological Evolution of Ag-nanostructured Films Prepared by Mass-selected Clusters.* In: Newest Updates in Physical Science Research Vol. 12. B P International, pp. 83-90. ISBN 978-93-91473-17-4

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Abstract

Fabrication of metal nanoclusters via gas phase synthesis method and their deposition on a solid surface has numerous importances as far as the application is concerned. The size of the deposited nanostructure can influence various properties of a thin film which led us to carry out the study of morphological aspects of the films that have been prepared by the mass- or size-selected silver nanoclusters on Si substrates. The Ag-nanoclusters films are produced by using a gas aggregation type magnetron-based nanocluster source and the size-selection is done by a Quadrupole Mass Filter (QMF) attached with the cluster source. The film deposition is carried out at varied cluster beam current for constant deposition time for the cluster size of about 4 nm diameter. The morphology of the films is investigated by atomic force microscopy (AFM) and scanning electron microscopy (SEM). From the observations, it is found that initially the nanostructured film is mono-dispersed for a lower cluster ion current while for higher ion current mound-like structures appear. The effects of surface diffusion and agglomerations of deposited clusters are discussed for the formation of mound-like structures. Structural and composition studies show the elemental purity of the films under investigation.

Compositional Investigation of Nano-patterned Si Surface Induced by Metal-assisted Ion Beam Sputtering: An Advanced Study

Deka, Anindita and Barman, Pintu and Bhattacharyya, Satyaranjan (2021) *Compositional Investigation of Nano-patterned Si Surface Induced by Metal-assisted Ion Beam Sputtering: An Advanced Study.* In: Newest Updates in Physical Science Research Vol. 12. B P International, pp. 129-136. ISBN 978-93-91473-17-4

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Abstract

Fabrication of nano-patterned Si surface with simultaneous metal co-deposition is demonstrated using low energy ion beam sputtering at normal incidence by the inclusion of stainless steel as seeding material for different sputtering times at room temperature. The nano-patterned surfaces generated at such a low energy range using ion beam are considered to be potential candidates in various fields of nano-technological applications. Herein the evolution of nano-dots topography on the Si surface has been observed from the morphological analysis. Investigation of chemical states from X-ray photoelectron spectroscopy (XPS) measurement reveals the presence of metal impurities viz. Fe and Cr originating from the stainless steel target. The high-resolution XPS core level spectra of the detected elements are characterized and subsequent analysis of their compositional details indicates the formation of metal-oxide and metal-silicide on the sample surface.

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Engineered Clay Nanomaterials for Biomedical Applications

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Anindita Saikia, Barsha Rani Bora, Priya Ghosh, Deepak J. Deuri & Arabinda Baruah

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Abstract

The therapeutic potential of natural clays was known to the mankind since ages and was used as cures for wounds, tapeworm, hookworm, diarrhea, and several other intestinal ailments. However, over the past few decades, engineered clay-based nanomaterials have been receiving immense attention of the researchers over the globe for their tremendous application potential, not only in therapeutics but also in food sciences, cosmetics, and various polymer industries. This can be attributed to their remarkable biocompatibility, low cost, and advantageous structural features. Moreover, this emerging class of two-dimensional nanomaterials provides vast scopes for facile chemical modifications facilitating the synthesis of novel nanocomposites with desired physicochemical characteristics. Here, we present a brief outline of the current developments in the area of engineered clay-based nanomaterials for applications in various branches of biomedical sciences, such as tissue engineering, cancer therapy, drug delivery, cosmetics, and regenerative medicines. Furthermore, it also attempts to provide an insight into the physical and chemical traits of these engineered clay nanomaterials that make them suitable for specific applications.

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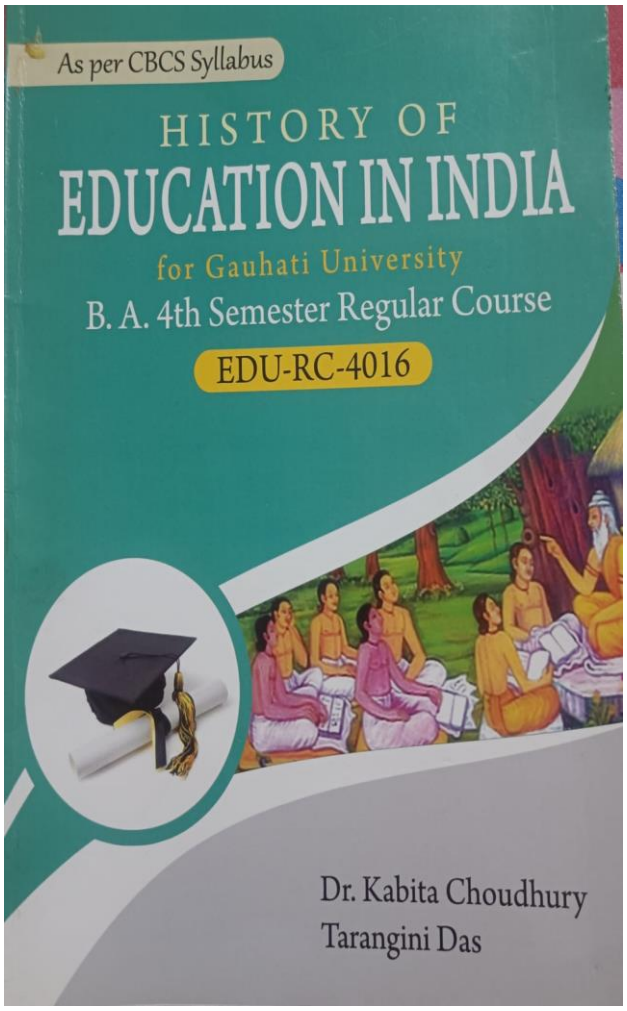

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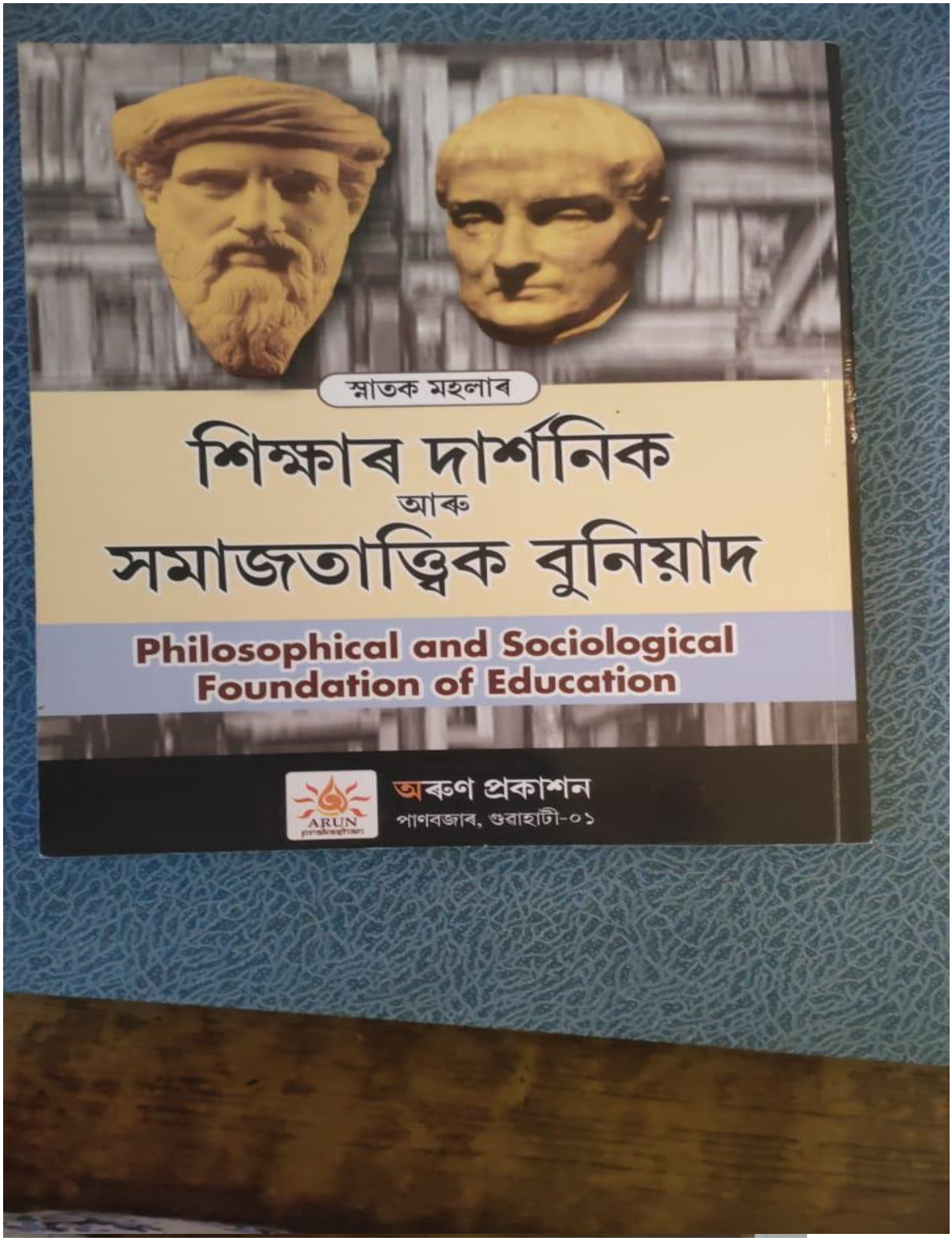

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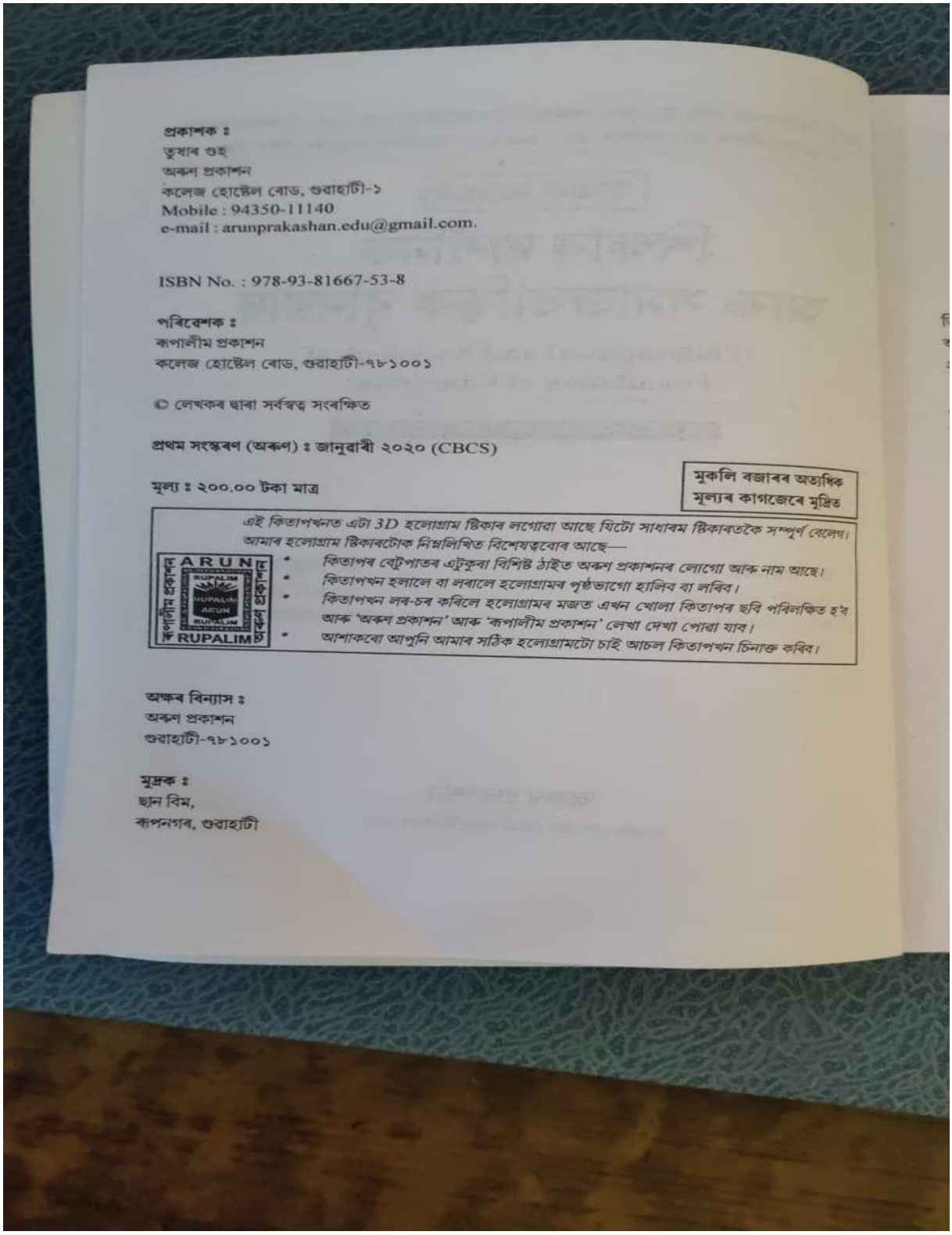

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মুকলি বজাৰৰ অত্যধিক মূল্যৰ কাগজেৰে মুদ্রিত

এই কিতাপখনত এটা 3D হলোগ্ৰাম ষ্টিকাৰ লগোৱা আছে যিটো সাধাৰণ ষ্টিকাৰতকৈ সম্পূৰ্ণ বেলেগ। আমাৰ হলোগ্ৰাম ষ্টিকাৰটোক নিম্নলিখিত বিশেষত্বৰোৰ আছে—

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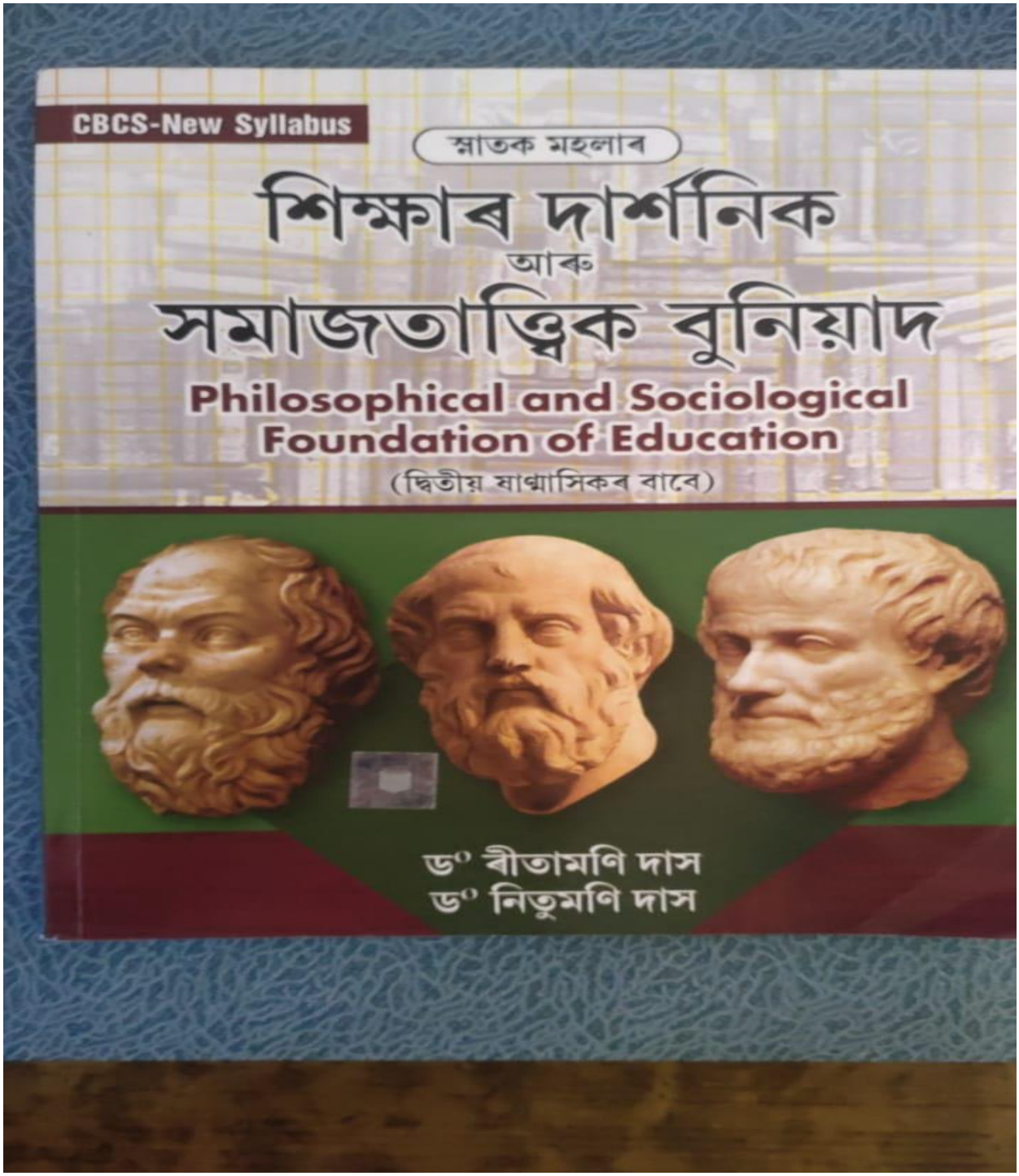

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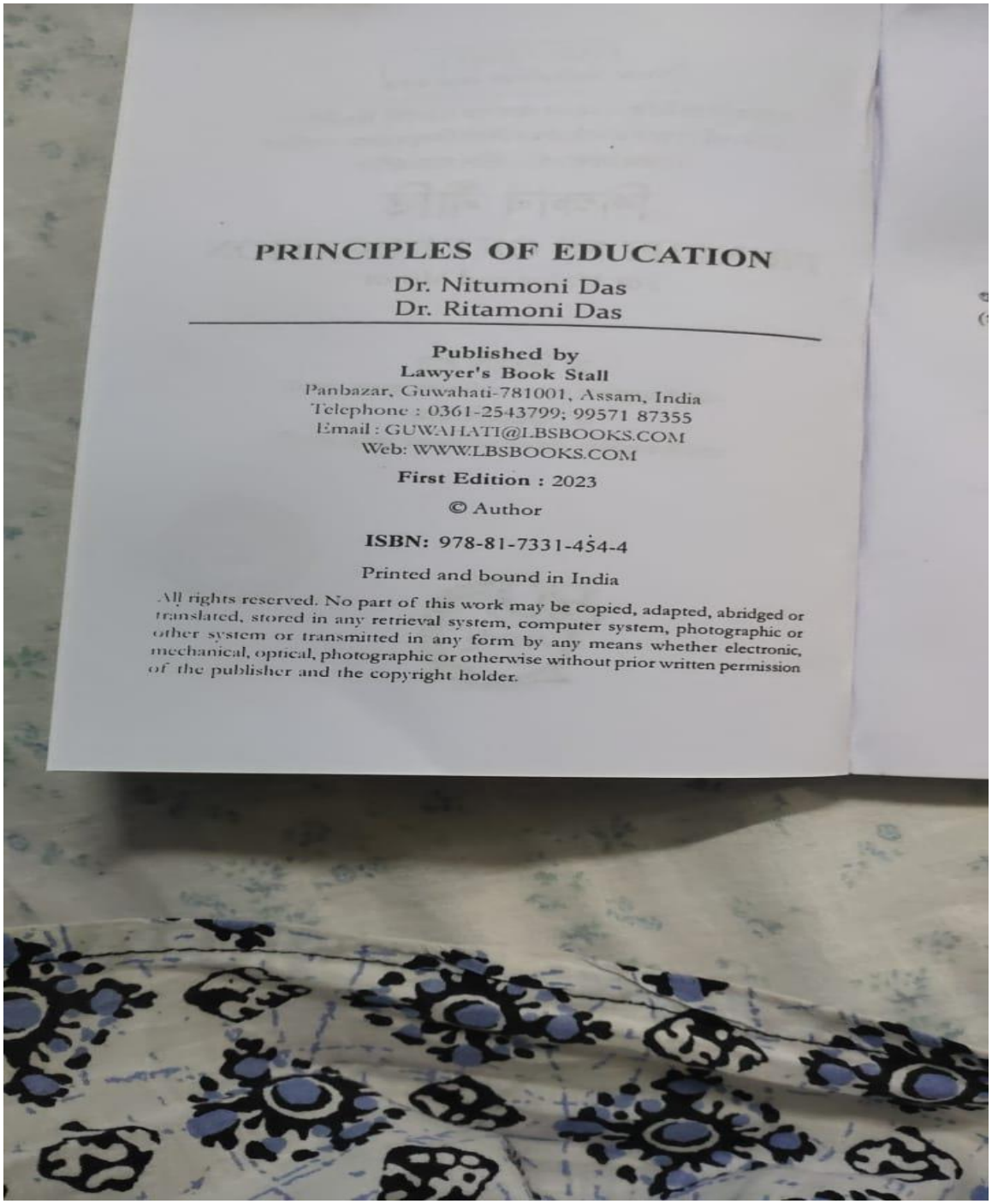

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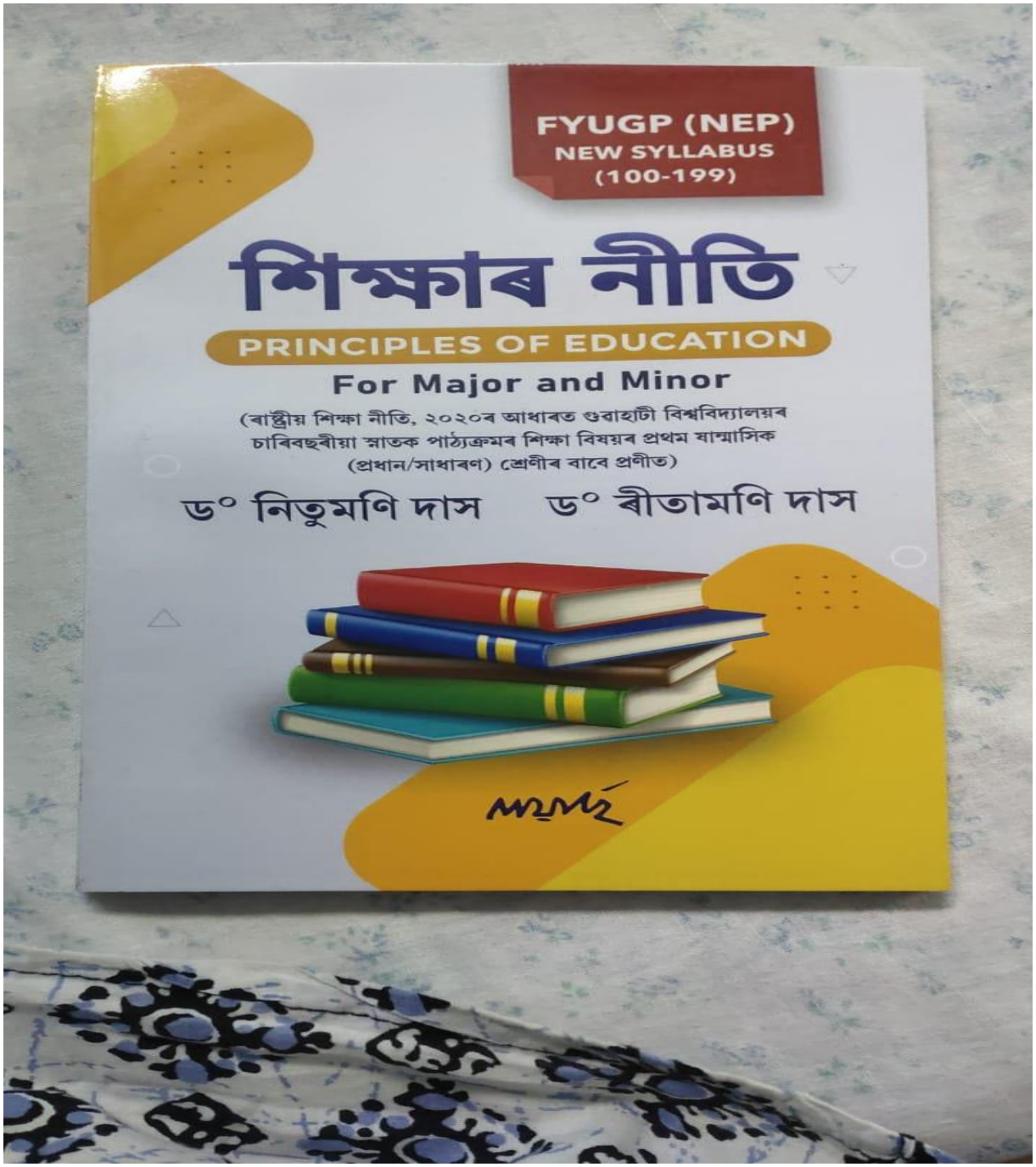

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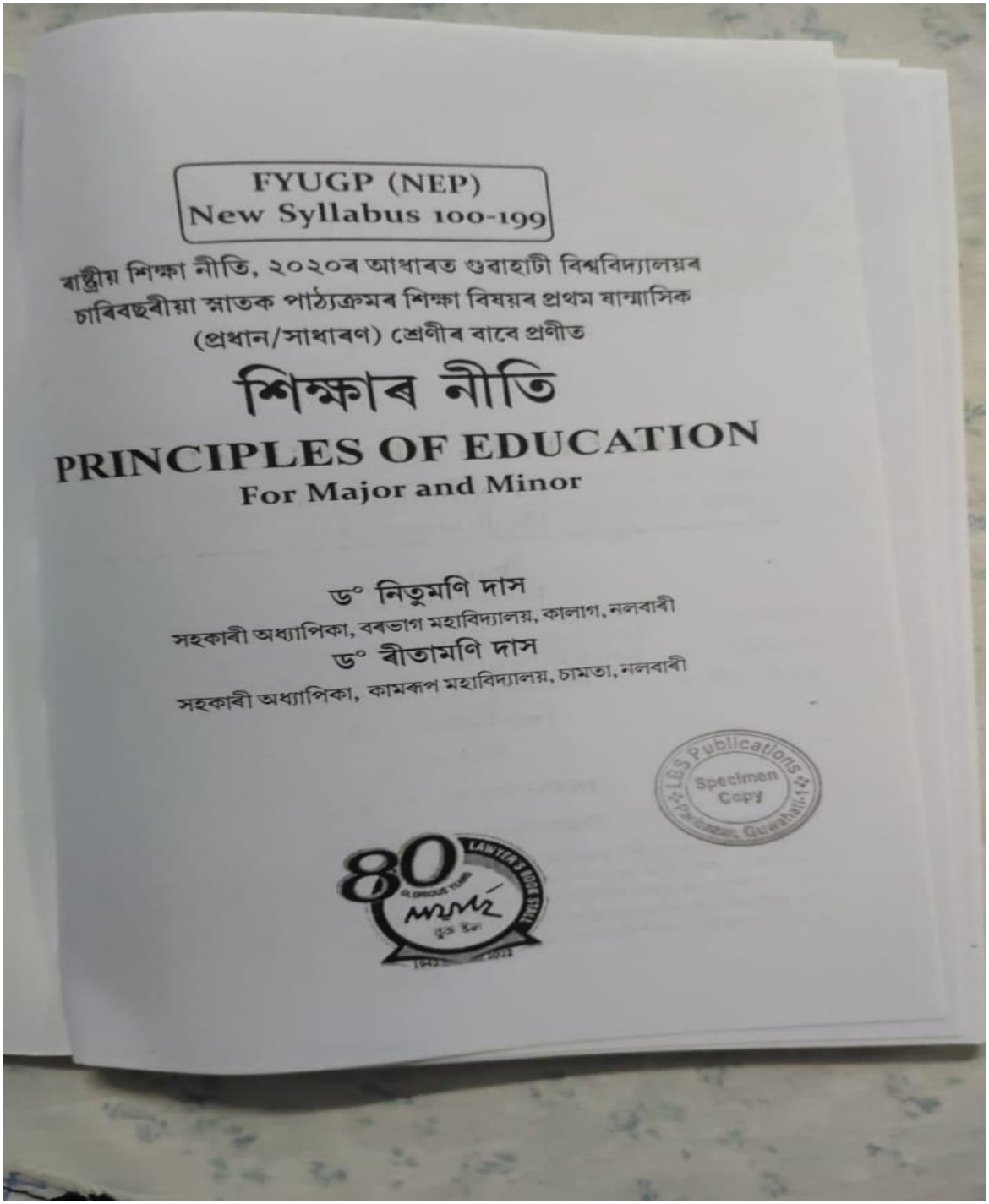

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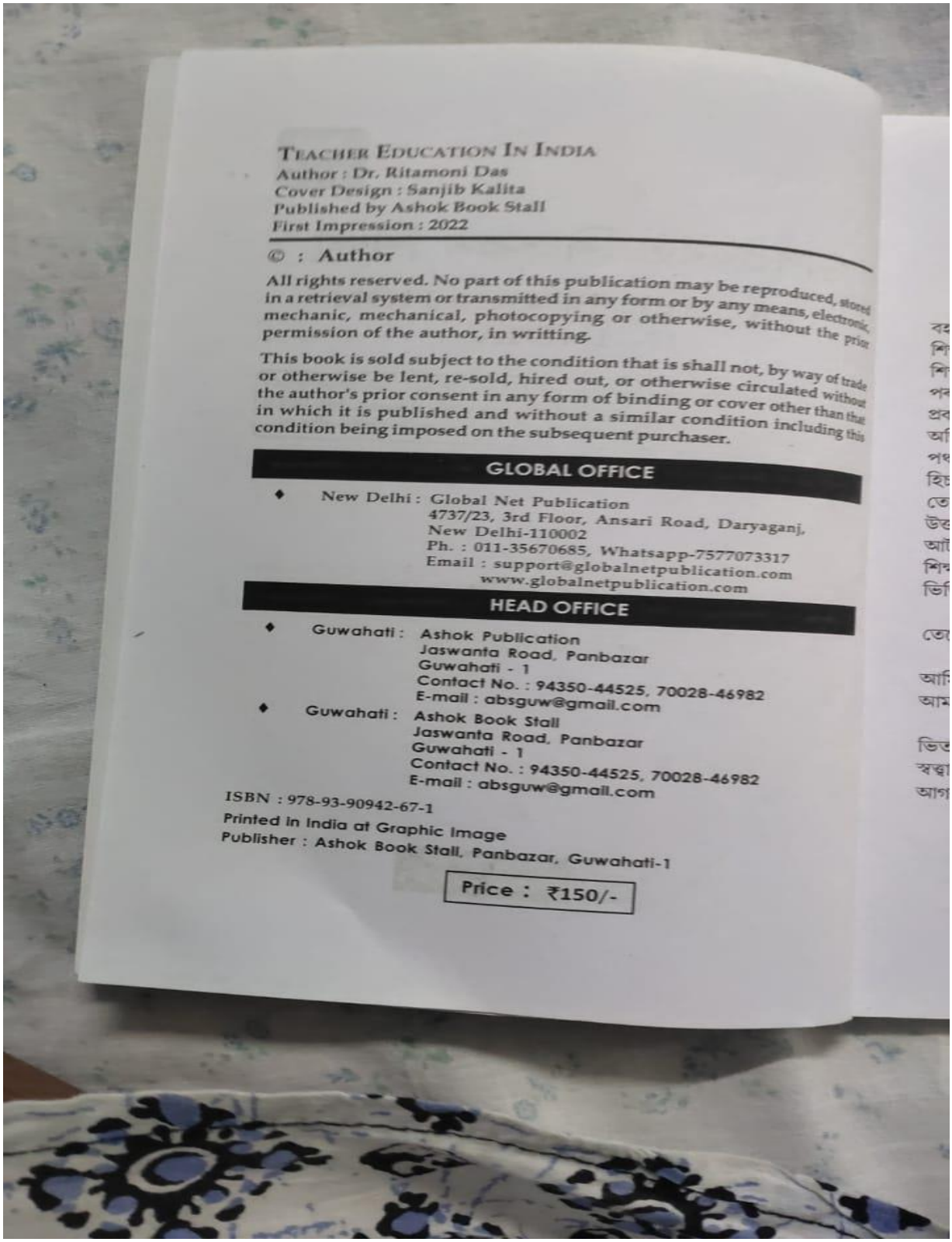

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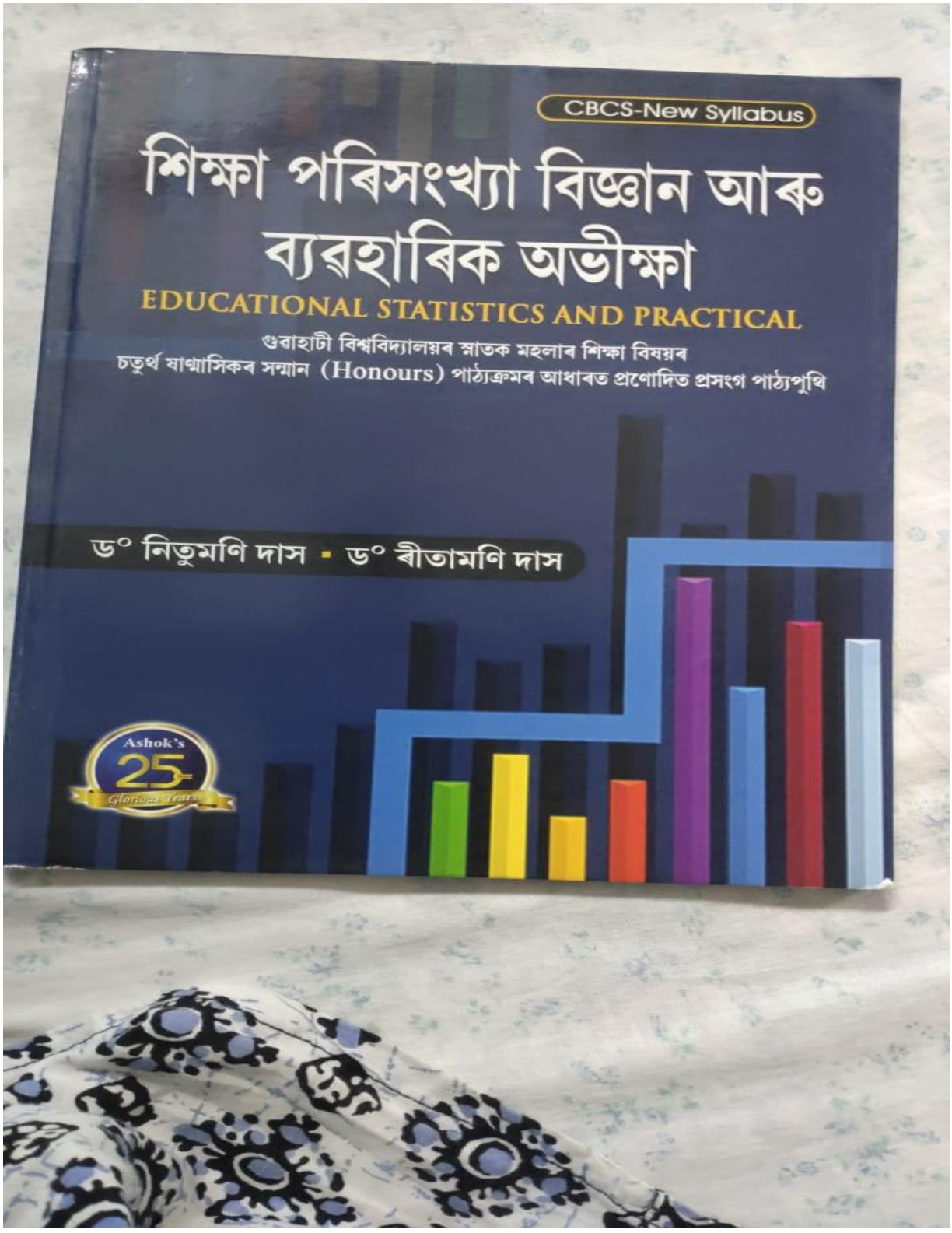

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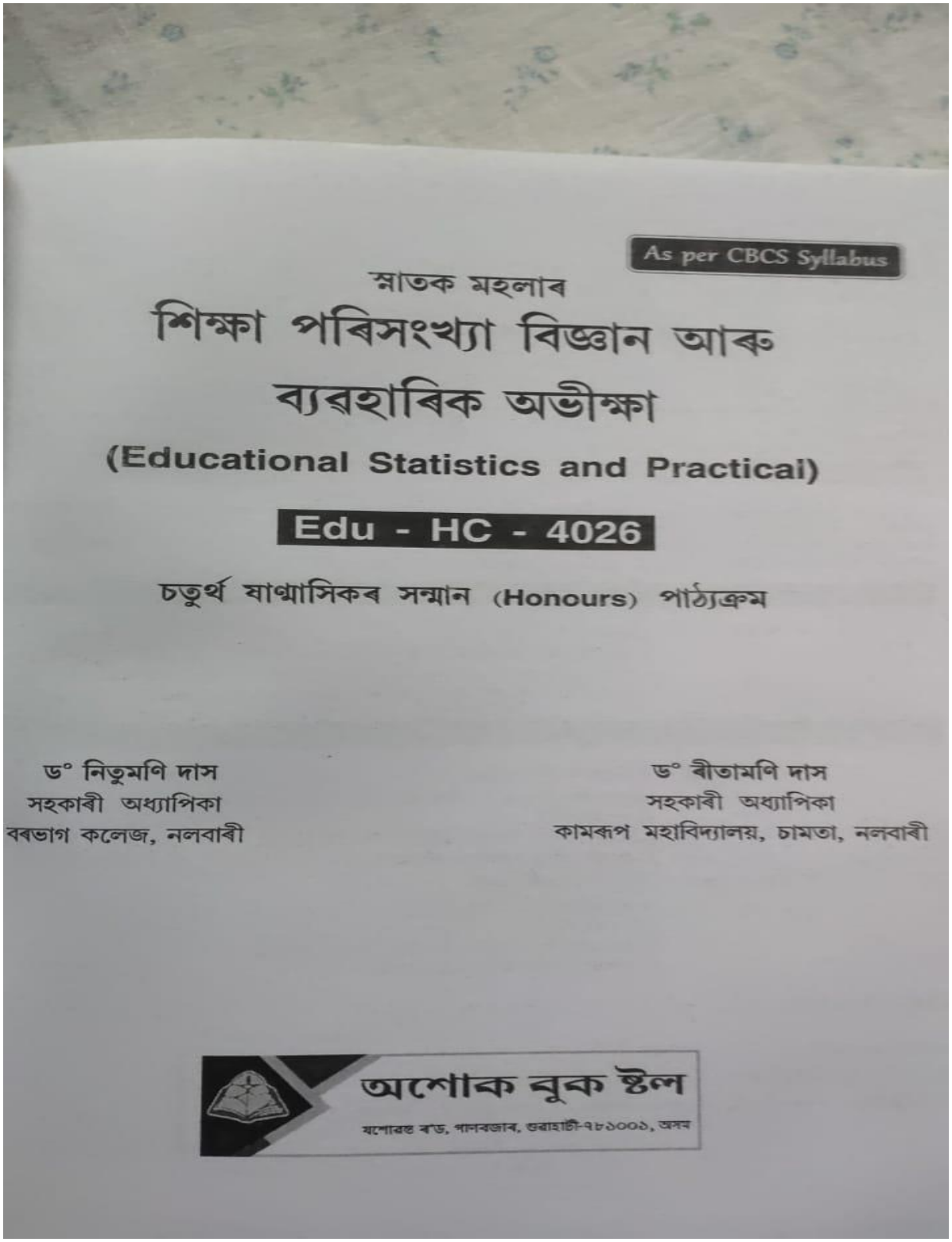

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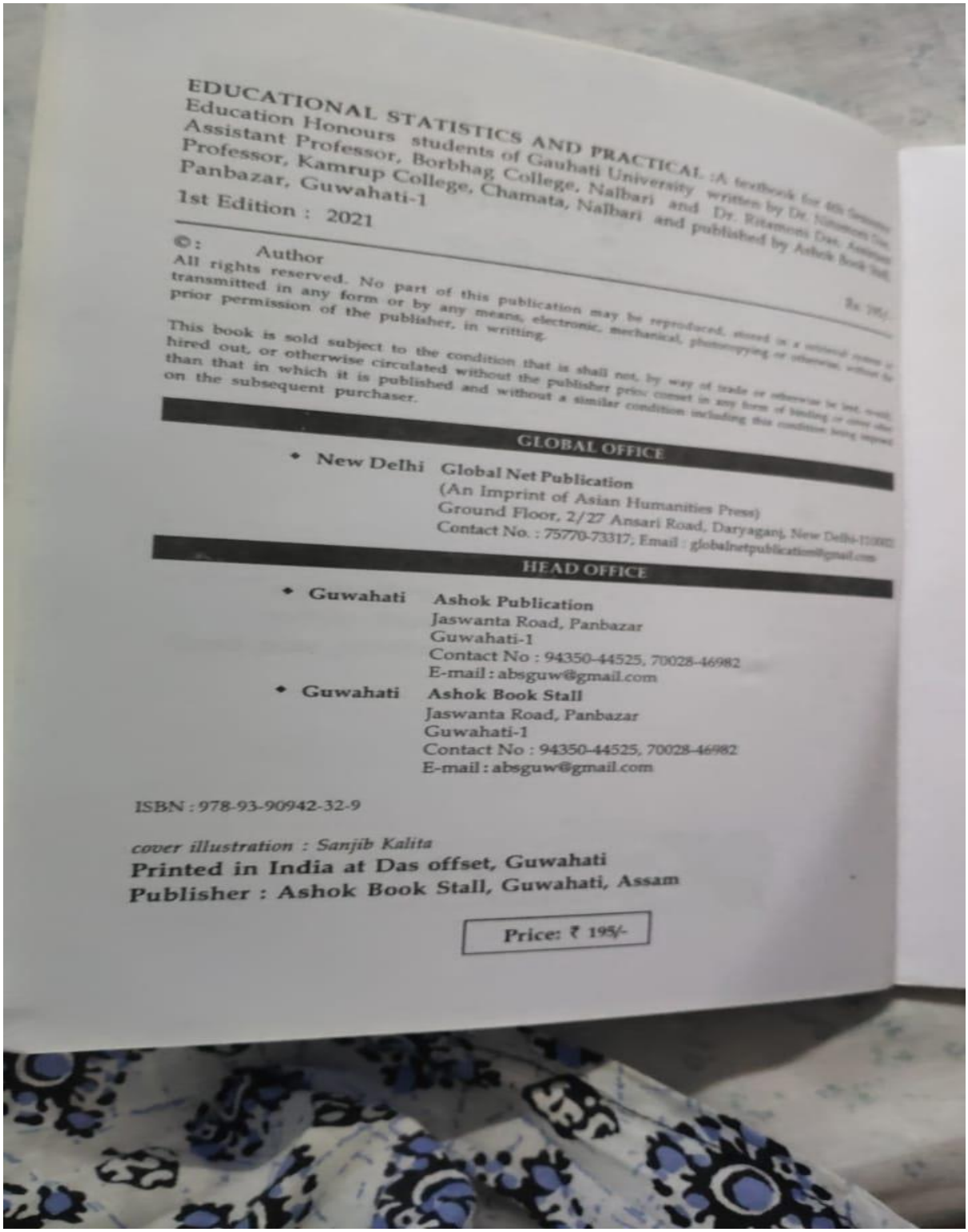

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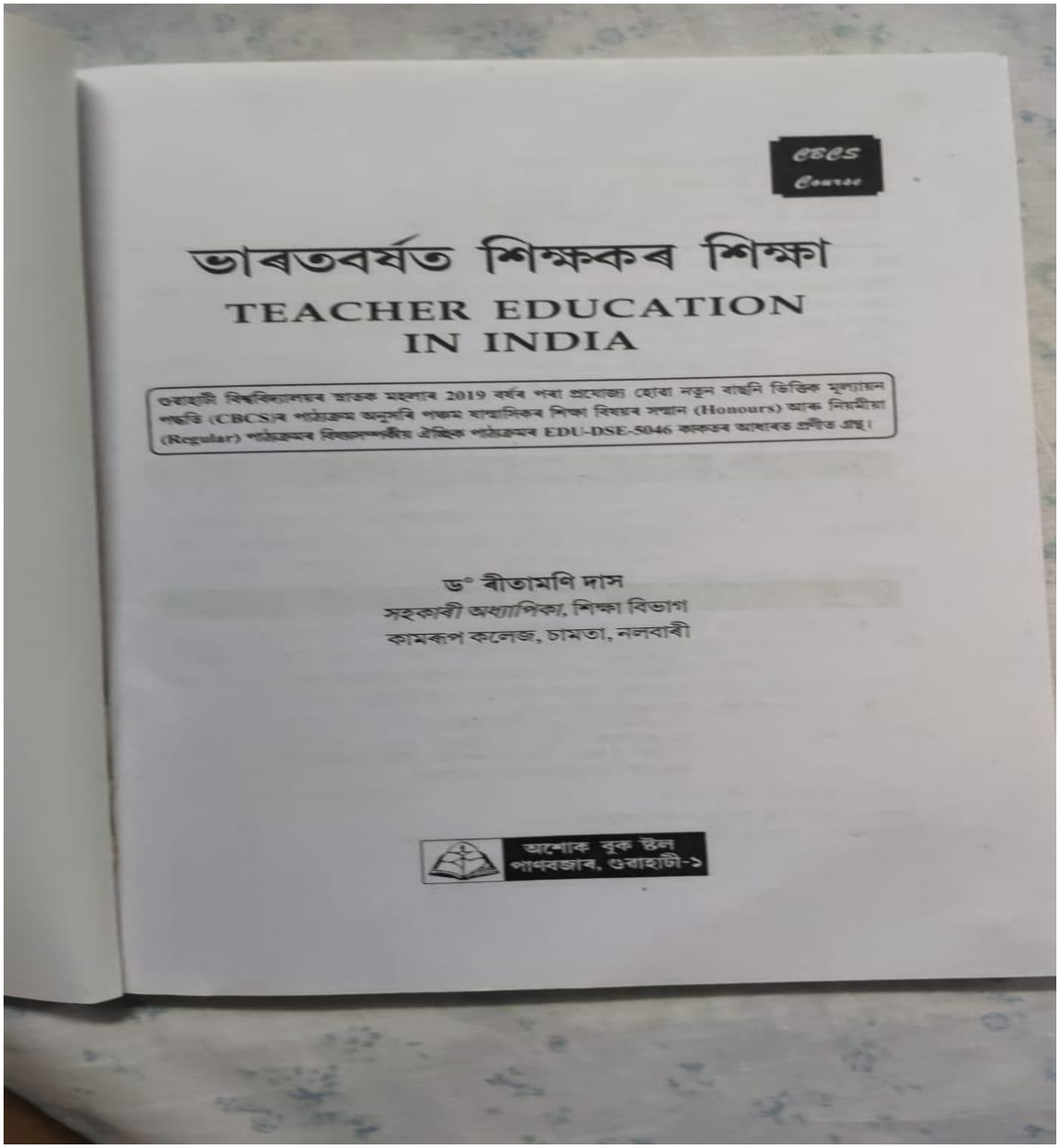

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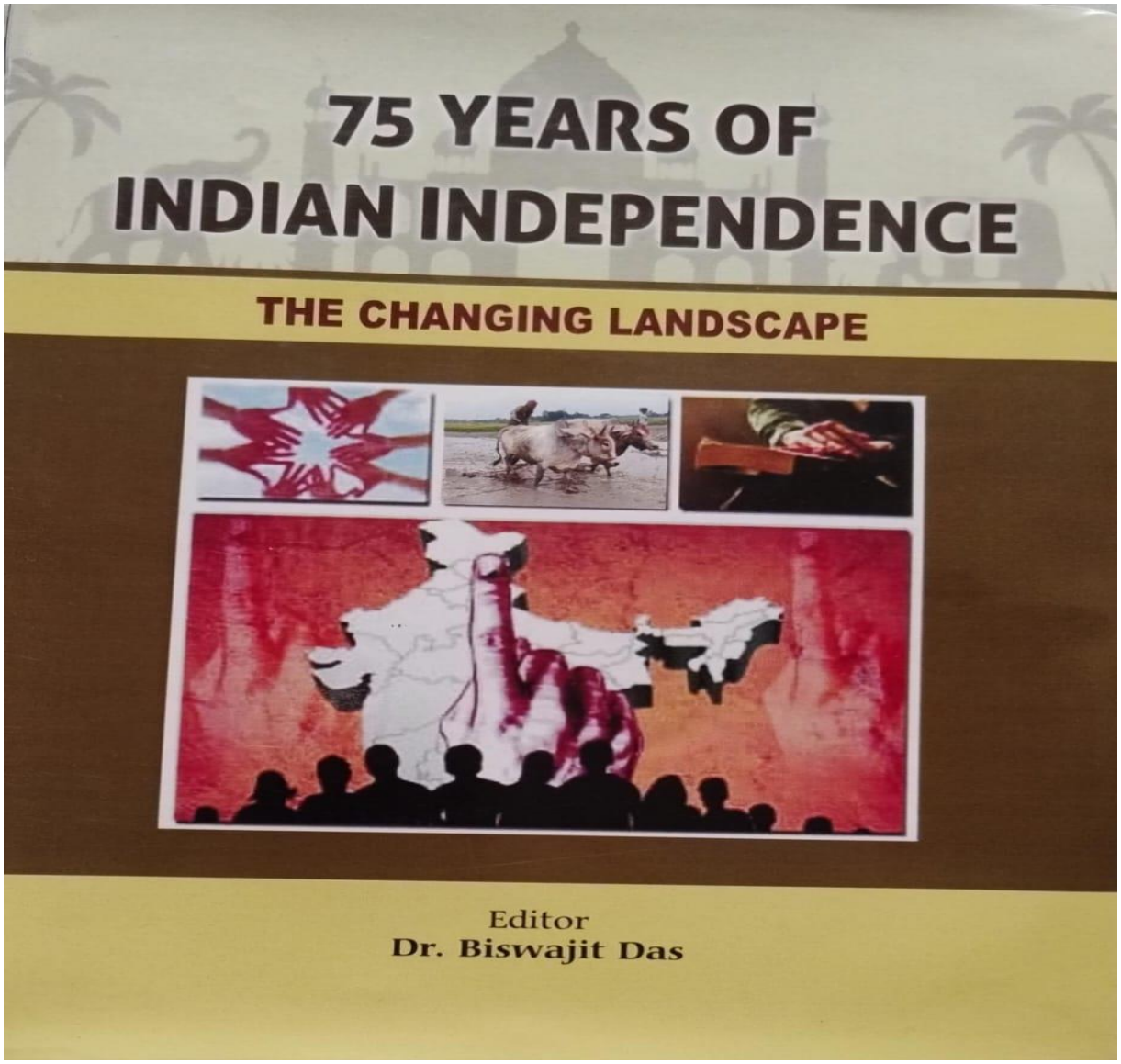

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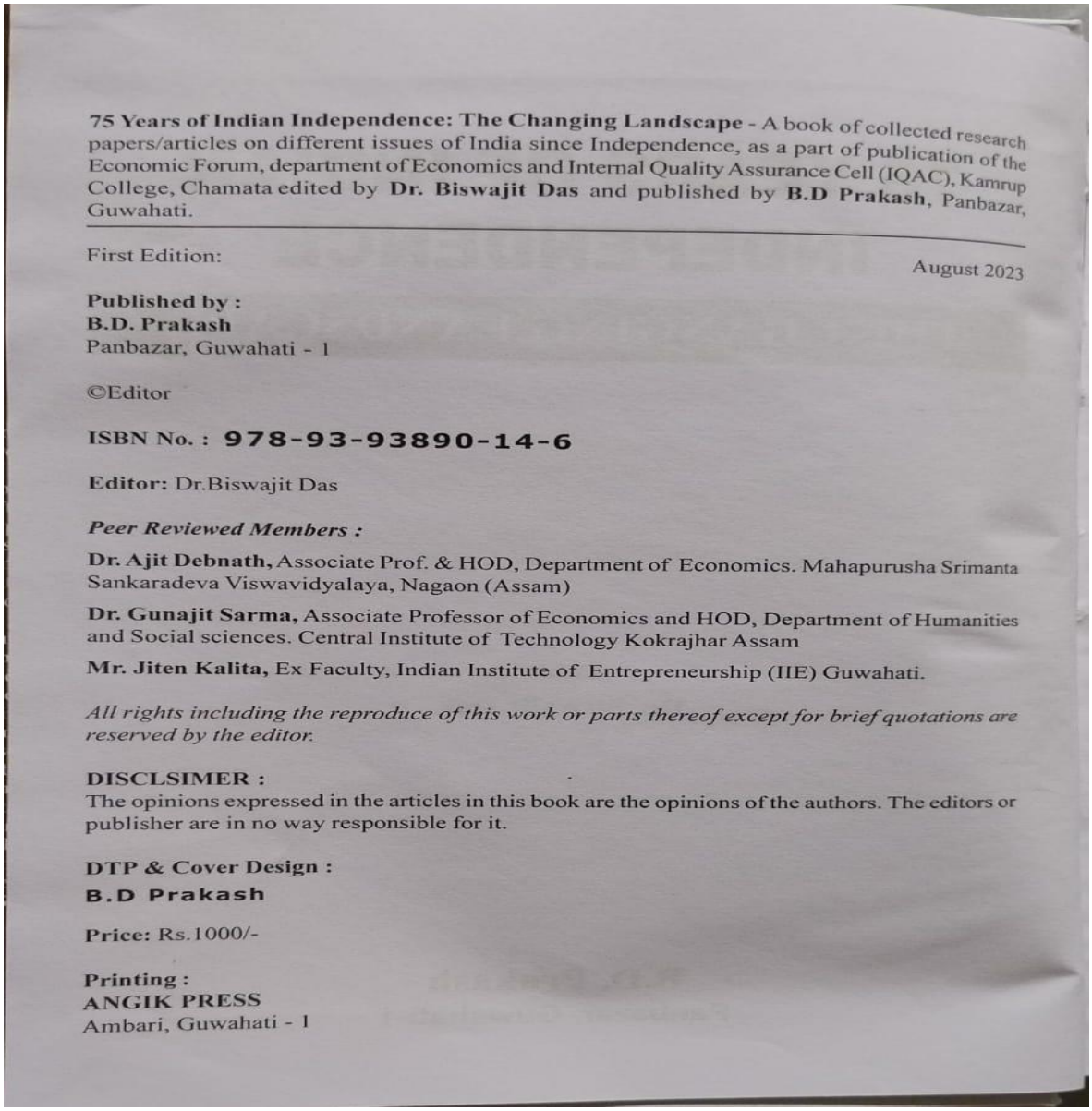

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Dignified position of women- a charity or a right

Dr. Padmaja Chetia

Abstract

Man and woman are the vital components of human society. In India, from the Vedic age to modern times the status and position of women have been changing.The main objective of this study is to ascertain the position of women in India by examining the vital areas of education, power and decision making, economy, health, media, violence and girl child.

Keywords: women, status, society

INTRODUCTION

The two basic components of our human society are man and women. Since time immemorial, scholars have tried to assess the problems faced by women and to study changes in their status around the world in general and Indian society in particular. The 'status' represents the position of individuals in the groups. The status of women refers to her position in the network of social role structure, privileges, rights and duties. The status of women is generally measured in the comparative amount by prestige and respect accorded to her with that of man. The status of women in India has been fluctuating. From the Vedic age till today, her status and position has been changing with the passing of time.

Women in the Vedic age were respected and they enjoyed a fair amount of freedom and equality. The age can best be termed as the period of feminine glory and prestigious life. Women participated in all the spheres like men. The Rig-vedic society was a free society.*In the post vedic age*, the status of women suffered a setback when various restrictions were put on woman's

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Dr. Nabendu Kumar Deb in his paperNuclear Power-A future realistic attempts to focus on fast growing energy needs of poorer countries, and extend the grid to a billion people who lack electricity till now. More electricity will also be needed to remove excess carbon dioxide from the atmosphere. He Opine that this huge amount of carbon free energy can be obtained from renewables alone, viz., wind, solar or rain, simply because they may not be available around the clock. Today these renewables work only with fossil fuel backup. The author shows that solutions to all these problems converge to the use of Nuclear Power as was successfully exhibited by Germany, Sweden and France. India can follow these models to eliminate energy related issues and improve its economy.

Dr. Padmaja Chetia reviewed the changing status and position of women from the Vedic age to modern times. She attempts to focus on position of women in India by examining the vital areas of education, power and decision making, economy, health, media, violence and girl child.

Dr. Rita Moni Das in her paper attempts to examinethe causes of domestic violence on women of different castes residing in Assam with special reference to Pub- Nalbari area. She alsoderived the impact of acts and laws made for women's protection to control violence made on women of different castes and also to get proper justice and rights by the victims.

Dr. Rajlakshmi Kalita aims to analyseGandhi's Ideal of Gram-Swaraj and present Panchayati Raj system in India.

Dr. Pankaj Namasudra in his paper attempts to focus extensively on Satriya Sanskriti of Assam along with the contribution of SrimantaSankardev. He elaborated the role of Satrafor providing moral education and spiritualvalue to the assamese society.

Dr. Kabita Choudhury and Md. ShamsulAlom in their paper an attempt has been made to study the Perspectives and Identity of the Char Areas people of Assam from a sociological lens with special reference to people of Assam. They showed that from the 1970s onwards, social scientists have begun to consider children as social actors, as opposed to the idea of children as 'incompetent and dependent beings'. They argued that it is not always enough to make legal policies to solve children's problems or see children's well-being from an adult's perspective, without considering them as their own agents.

Dr. Tarali Boro examines the identity of Bodo community and origin of Bodo language. Her study On identity of Bodo community, origin of Bodo language, Bodo culture and Bodo traditions was extensively related toBaska district of Assam.

Mithichar Basumatary and Dr.Gunajit Sarma in their paper reviewed tourism policy in India since independence. They attempts to reflect the National Tourism Policies of India and also discussed the challenges involved in achieving the tourism policy. The paper shows that Tourism is one of the largest global industries of the world and yet the focus is seen only on attracting tourists to natural environments and heritage sites. The tourism sector offers diverse forms of recreational activities, providing a perennial source of income generation. They suggested that the tourism policy should aim at exploring all the possibilities that the tourism industry can offer.

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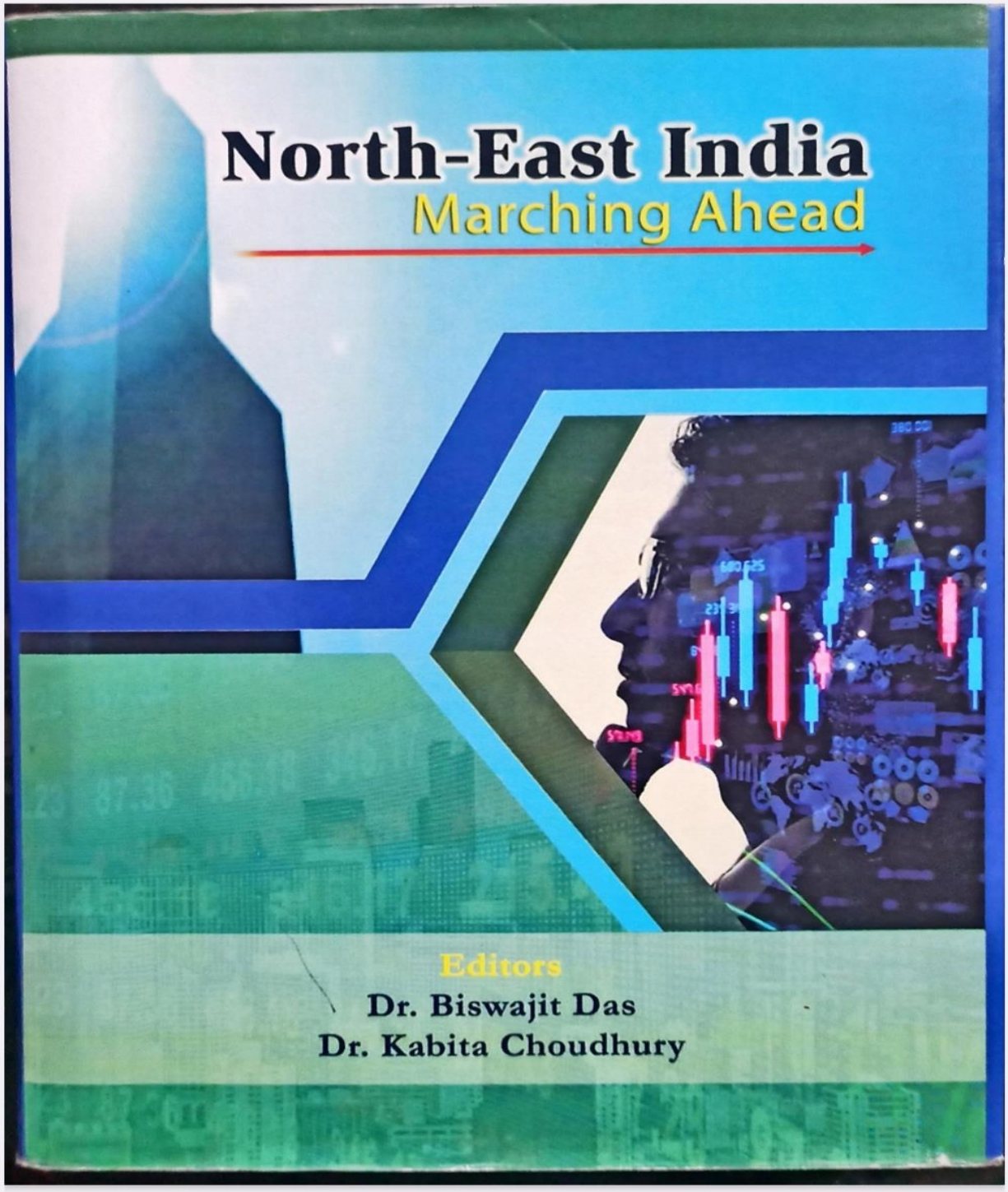

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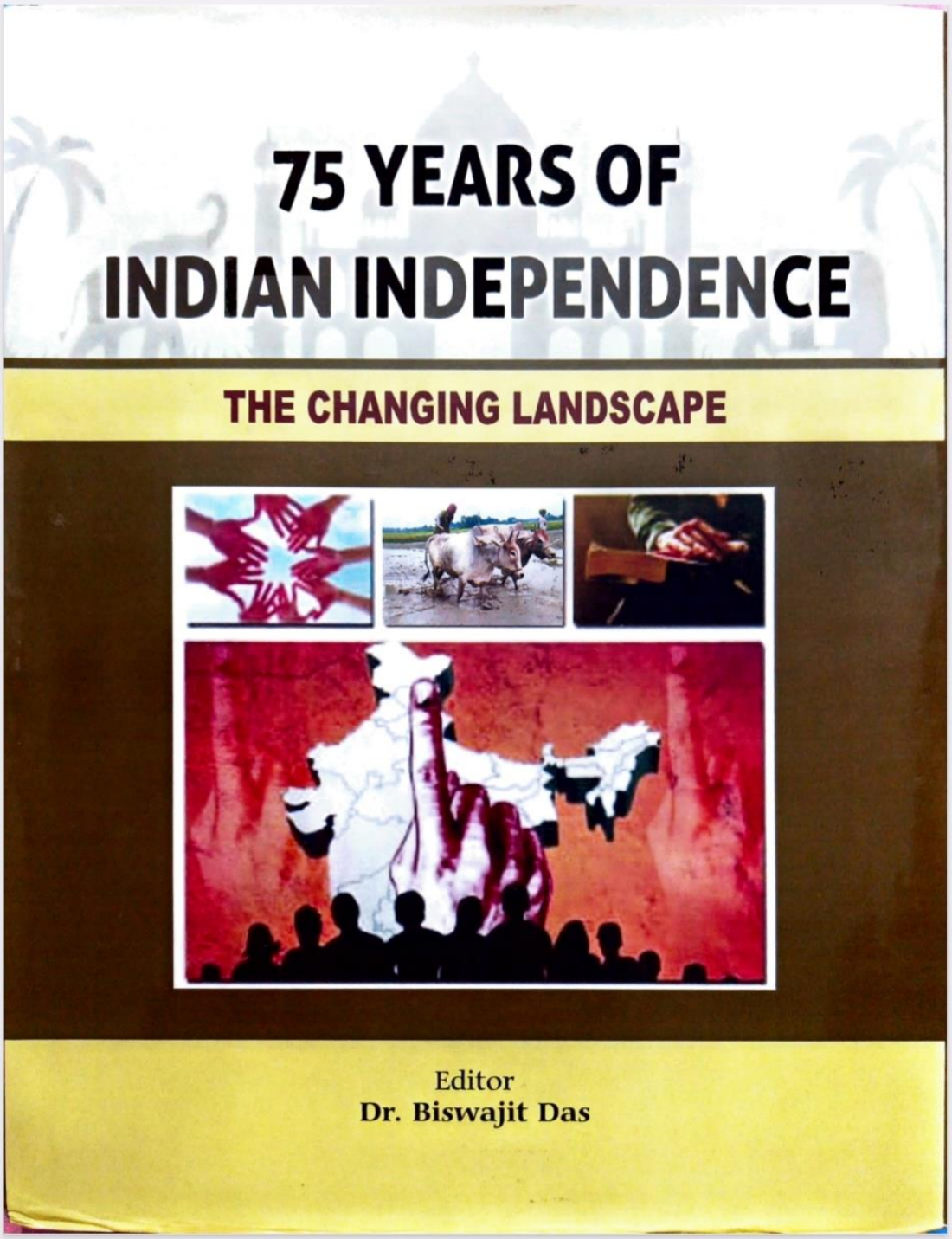

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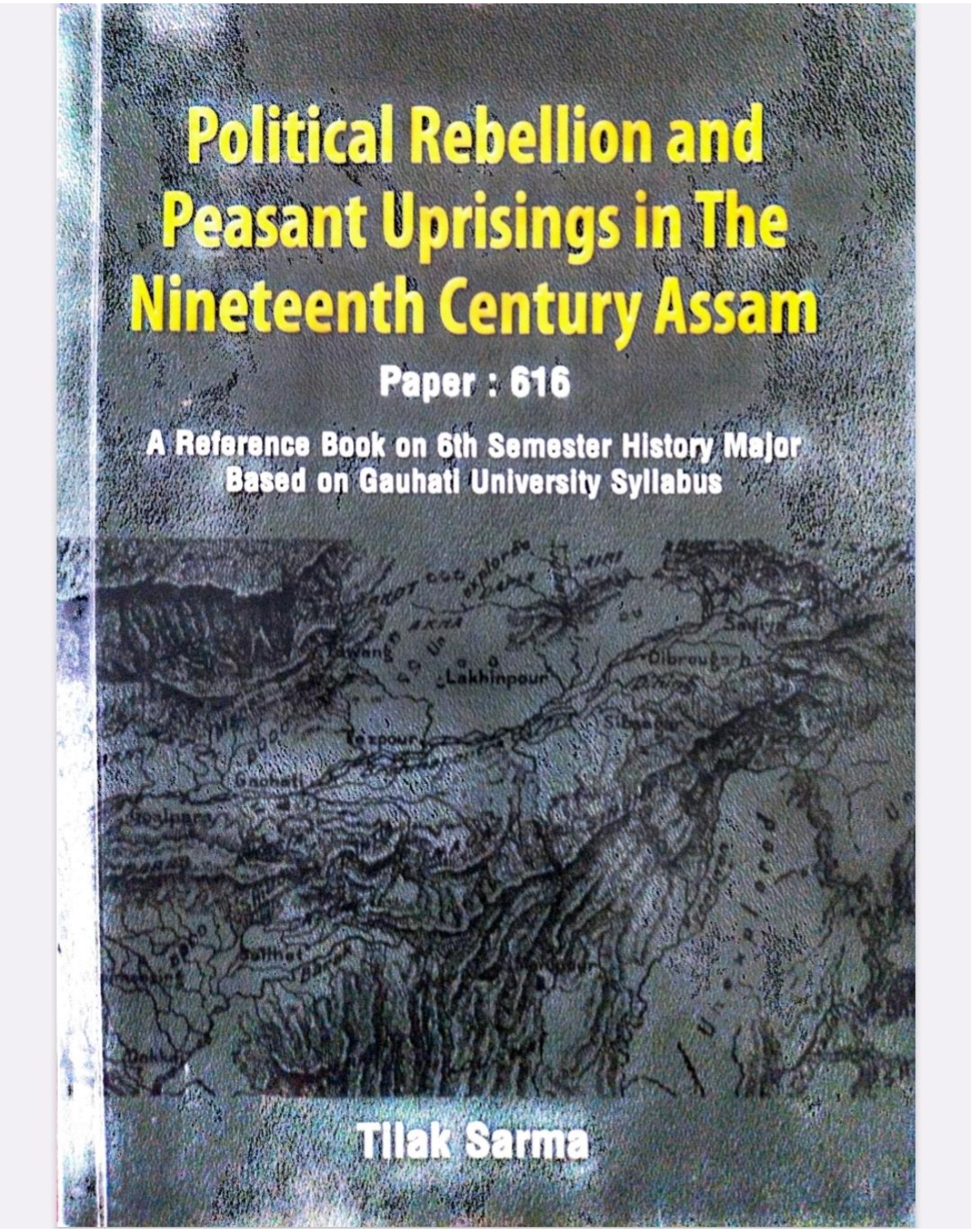

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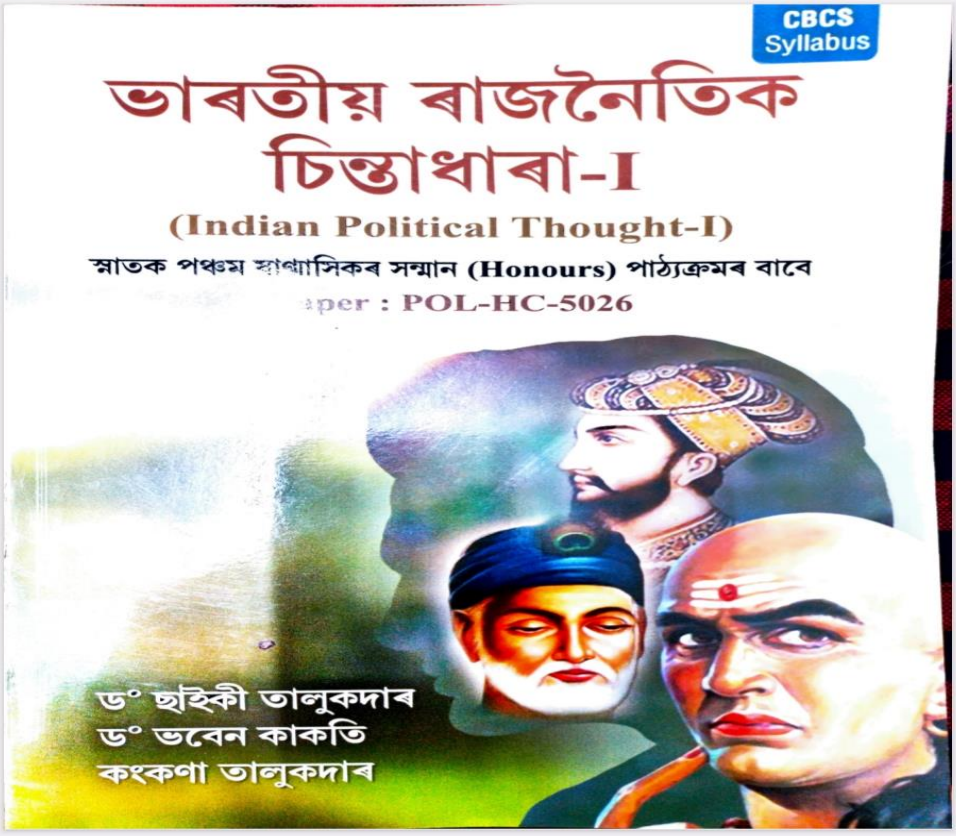

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The Status of Women in the Vedic Literature

Dr. Subodh Kumar Mishra Bhagawati
Assistant Professor
Kamrup College, Chamata

Status means position or rank in a social group of legal system. It also means the position of respect and importance given to someone or something. Veda, the most valuable holy book of Indian civilization, reflects the wisdom of Indian people in the world. The ancient civilization of India provides us the knowledge of the society which depends on nature. At that time the status of women was so high. Women during the vedic period enjoyed equal status with men in all aspects of life. Works by ancient Indian grammarians such as Patanjali, Katyana suggest that women were educated in the early vedic period. The history of women education is not linear, nor does it have a well-organized structure. But the historical sources often tend to be elitist and present a glorious picture of the Indian woman in the past. The degree of freedom given to women indicates the nature of the status during vedic period. Marriage in the vedic period was considered a social religious duty and united the couple on an equal looting. Polygamy (X-159/3), Widow Marriage (X-40/2) etc. were also available at that time.In the religious field, wide enjoyed full rights and regularly participated in religious ceremonies with her husband. Women's participation in public meetings and debates, however, became less and less common in later Vedic period. In this paper we propose to discuss the status of women in the vedic literature.

Methodology and Objectives of the Study:

To write this paper, mainly secondary data have been used from textbooks, reference books, websites etc. The study is mainly based on analytical study only. The main ob

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writing this paper is to know about the educational status of women in the Vedic literature

As the receiving of education in ancient India, meant the learning of the four Vedas and other sacred literature at the feet of holy preceptors, it was therefore regarded as a great religious privilege. In Vedic period women were on an equal footing with men in the matter of receiving the knowledge of the sacred literature. Biswavaaraa (V-28) wrote Sukts as

"Samiddho Agnirdibi Shocirashret Pratyingngus hasamur biyaa Bibhati.
Ati Pracee Biswavaaraa Naamobhirdebaa Eelaanaa Habishaa Ghritaacee."(V-28/1) etc.

In Vedic literature there are many lady-Rishis also who preached the message of Vedas from place to place. They not only expounded hymns, but also performed sacrifices like priests, offered oblations to the gods and won honourable places in the galaxy of the noble singers and occupied glorious niches in the temple of fame. To cite a few examples only, we may mention the princess Ghoosha who was a celebrated seer of many Rigvedictexts. (X-39 and 40) Several female seers are mentioned in the Rigveda to whom some Vedic hymns were ascribed, such as Vagambhrini (X-125), Yami (X 154), Indranee (X-145). ApalaAtreyee (VIII-91), Aditi Dakshayanee (X-72), Urwashee (X-95) Surya (X95), Sarparajni (X-189) etc. In Samveda also we find female seers as Sarpajnee(6, 14) etc. In Yajurveda we find several female seers also as Lopamudra (XXIII.II.15, XXXVI.20)

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প্রকাশক-

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পানবজাৰ, গুৱাহাটী- ১
দূৰভাষ : ৭০০২২১৪২২৭, ৯৩৬৫৮৮৭৮০৫
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Unit-I: The Making of the Indian Constitution
- a. The historical background
- b. Constituent Assembly of India
- c. Philosophy of the Constitution and features

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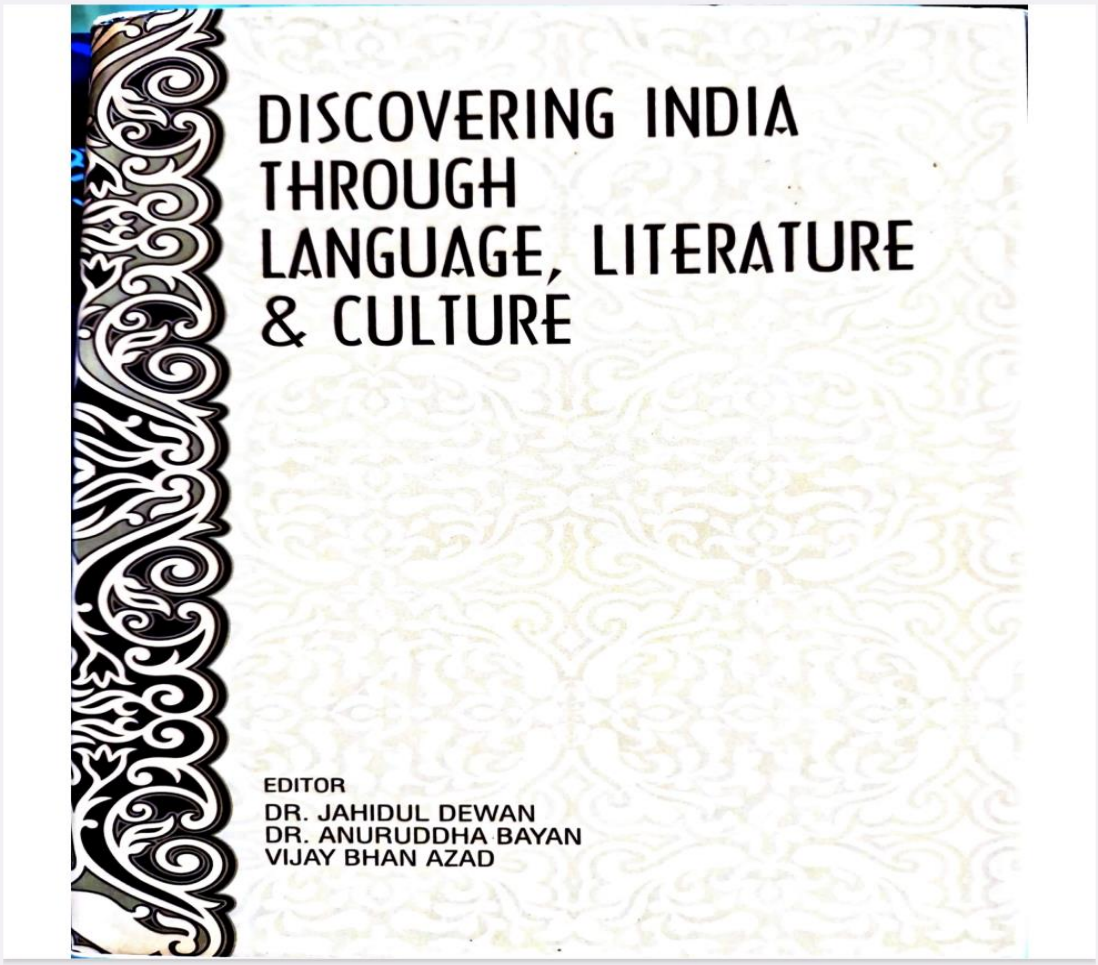

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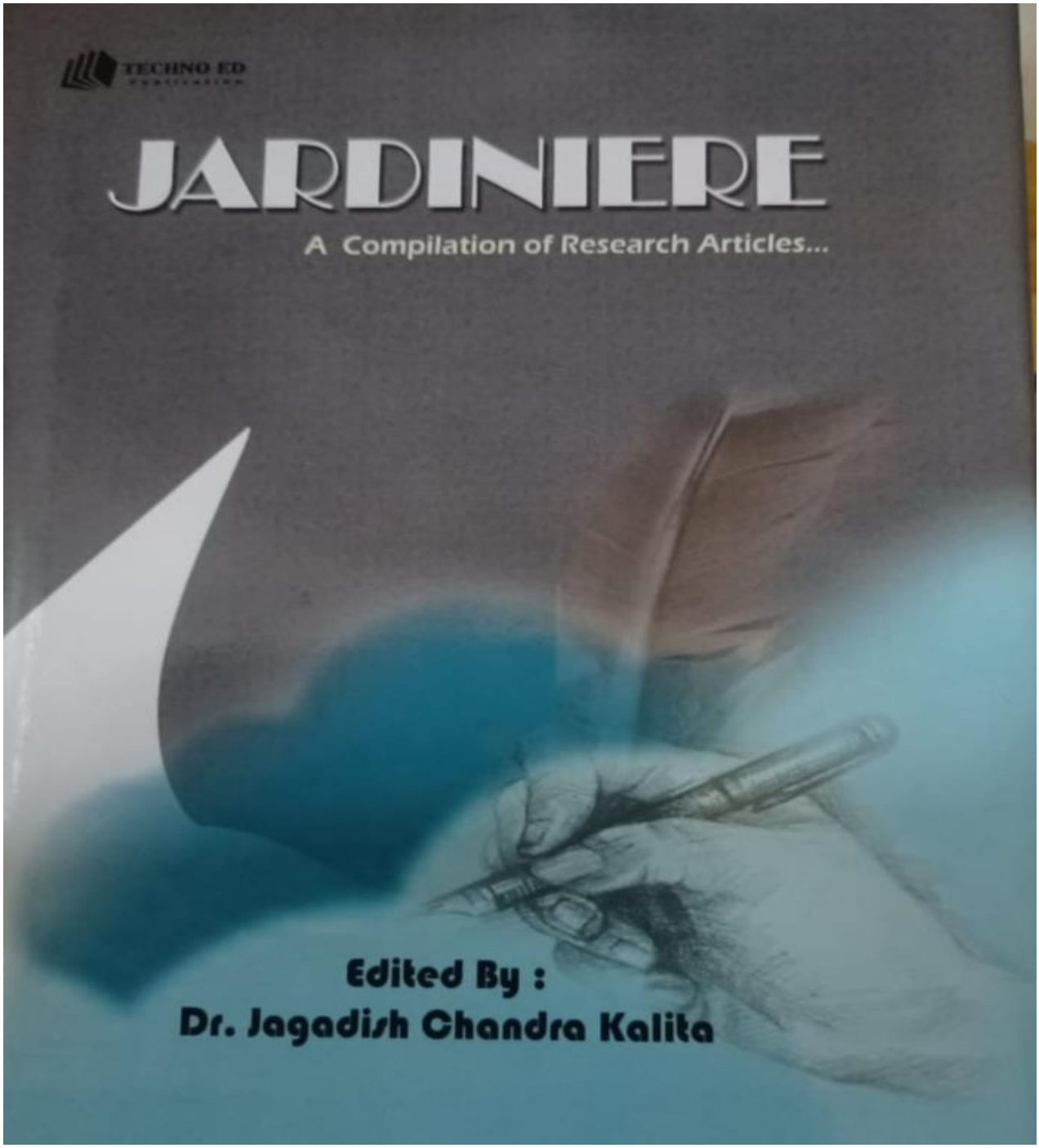

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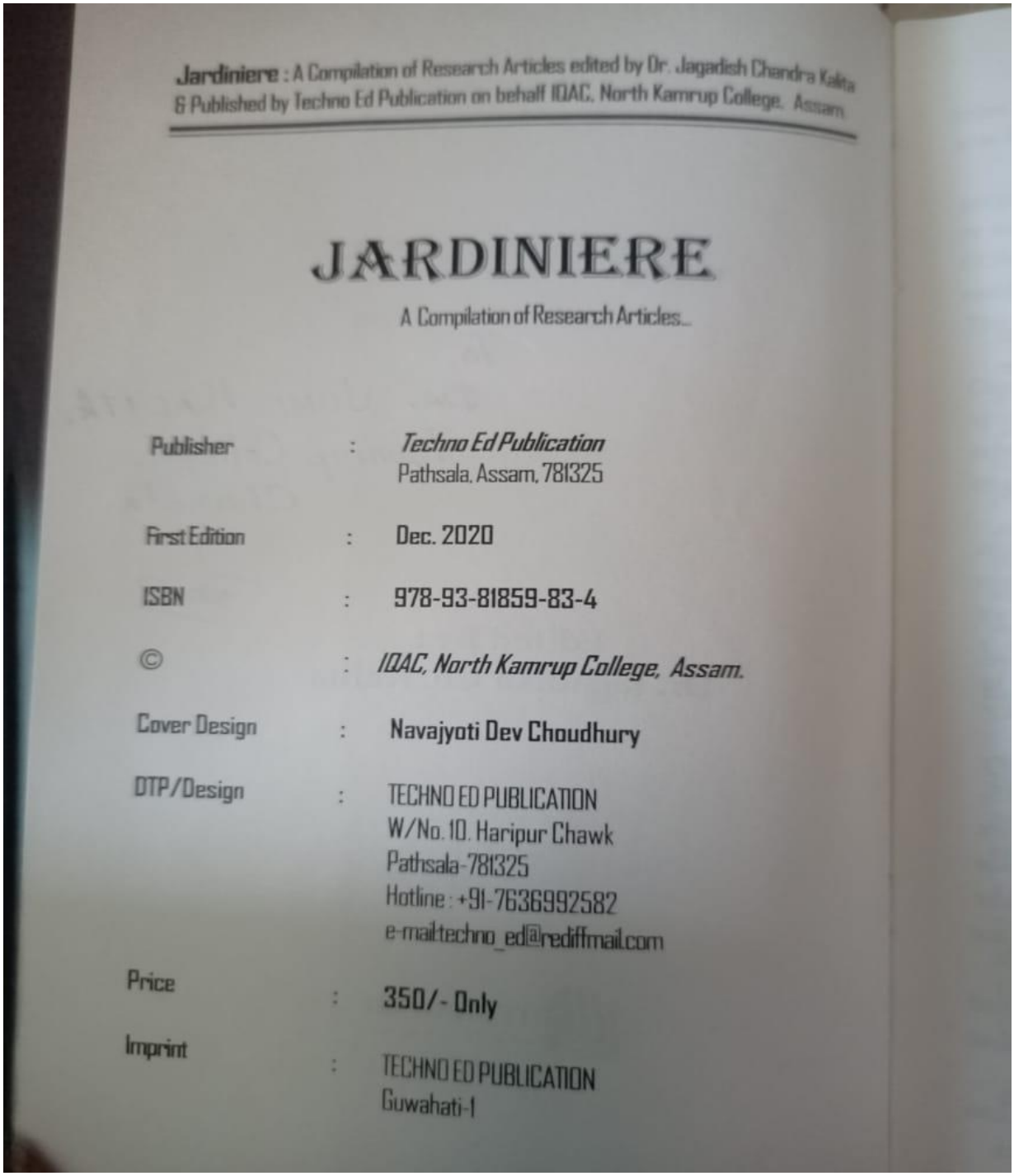

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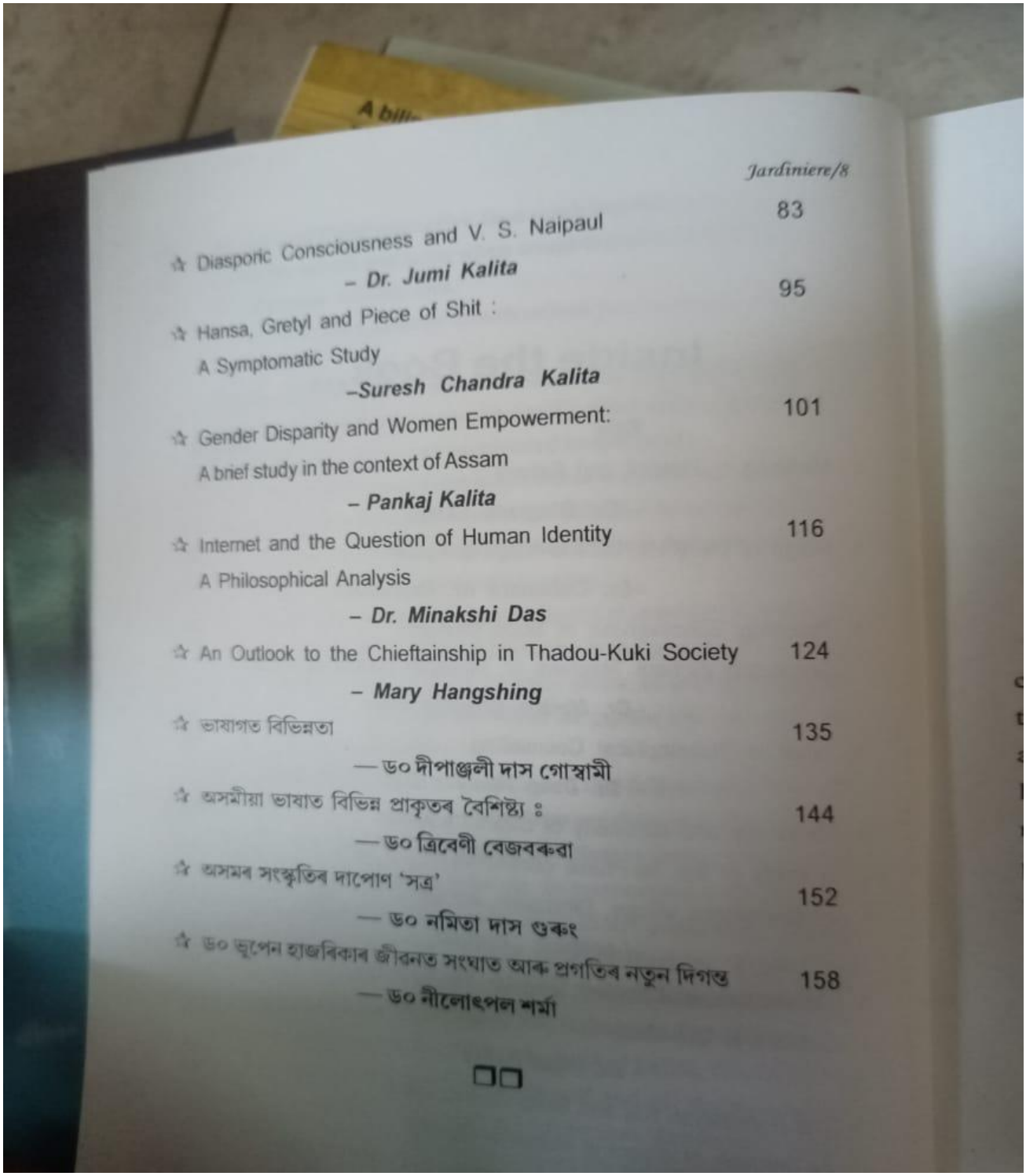

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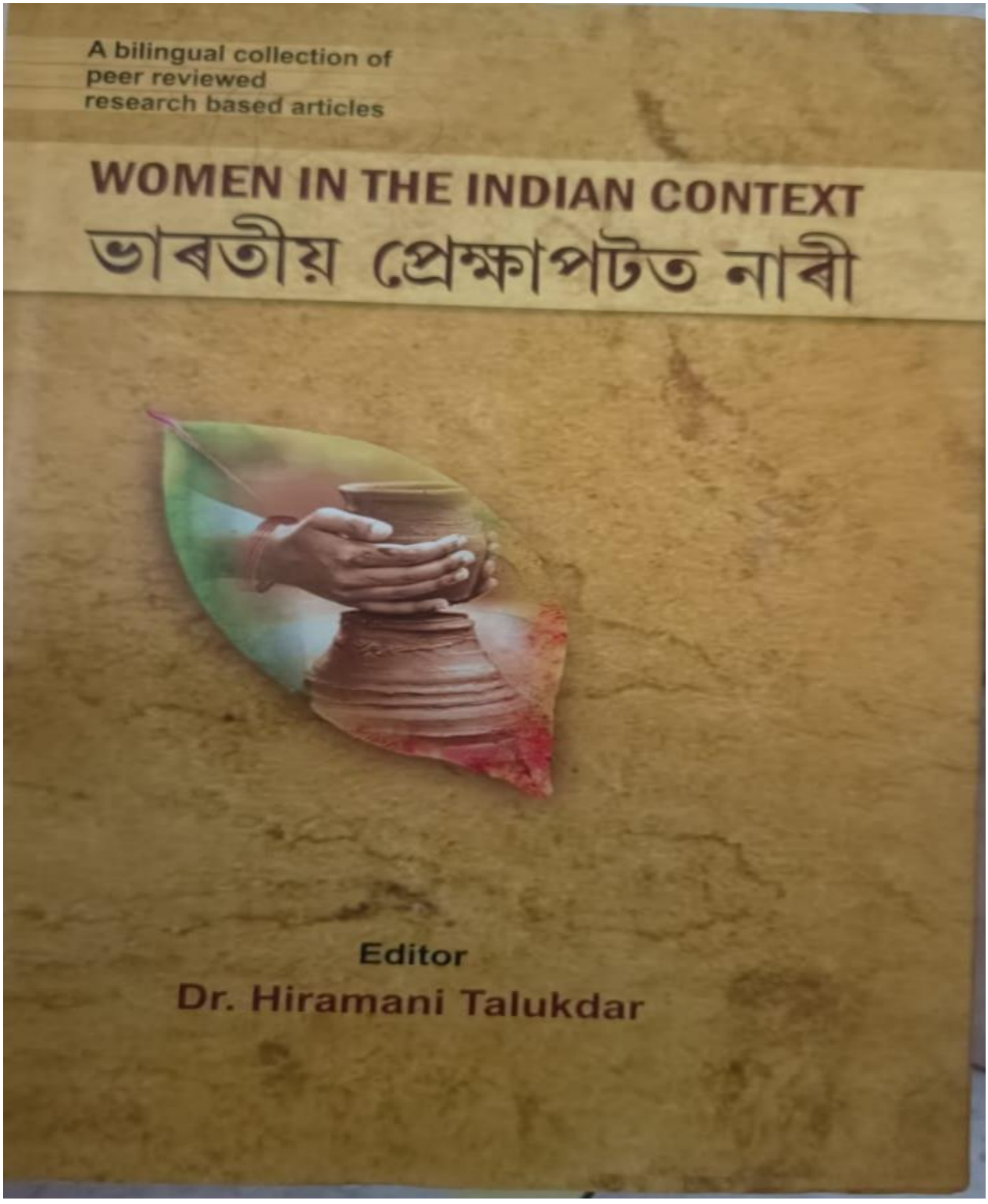

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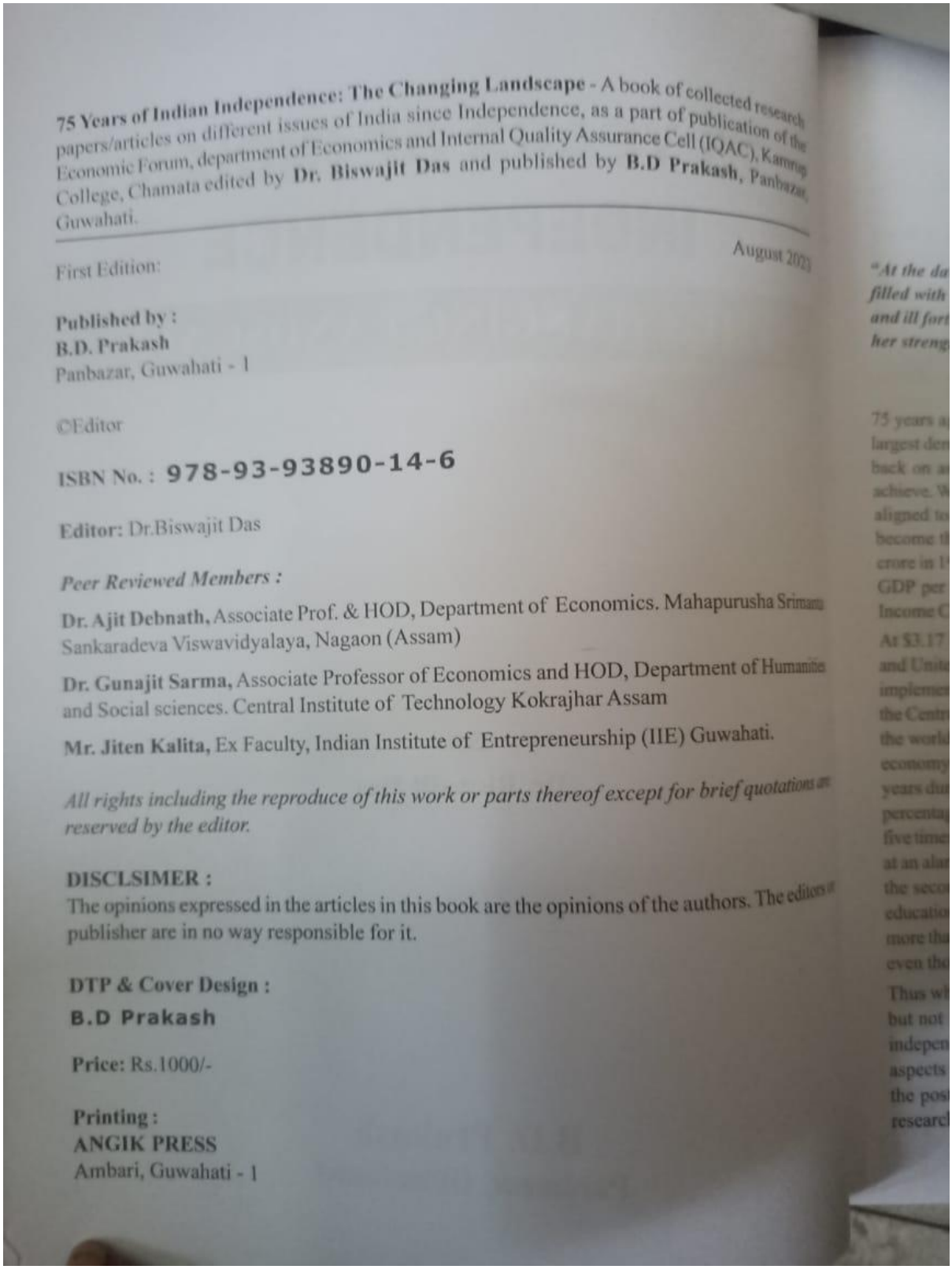

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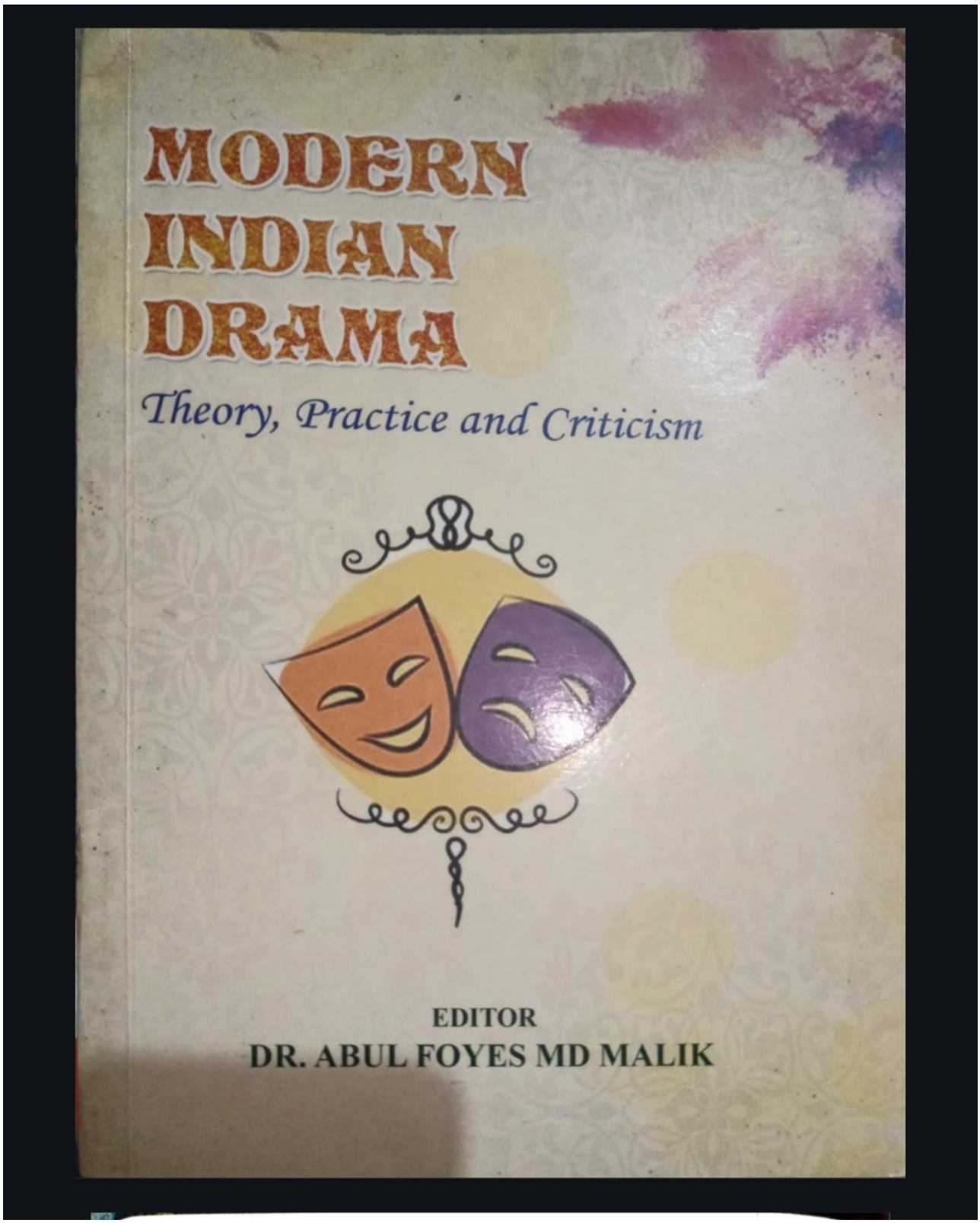

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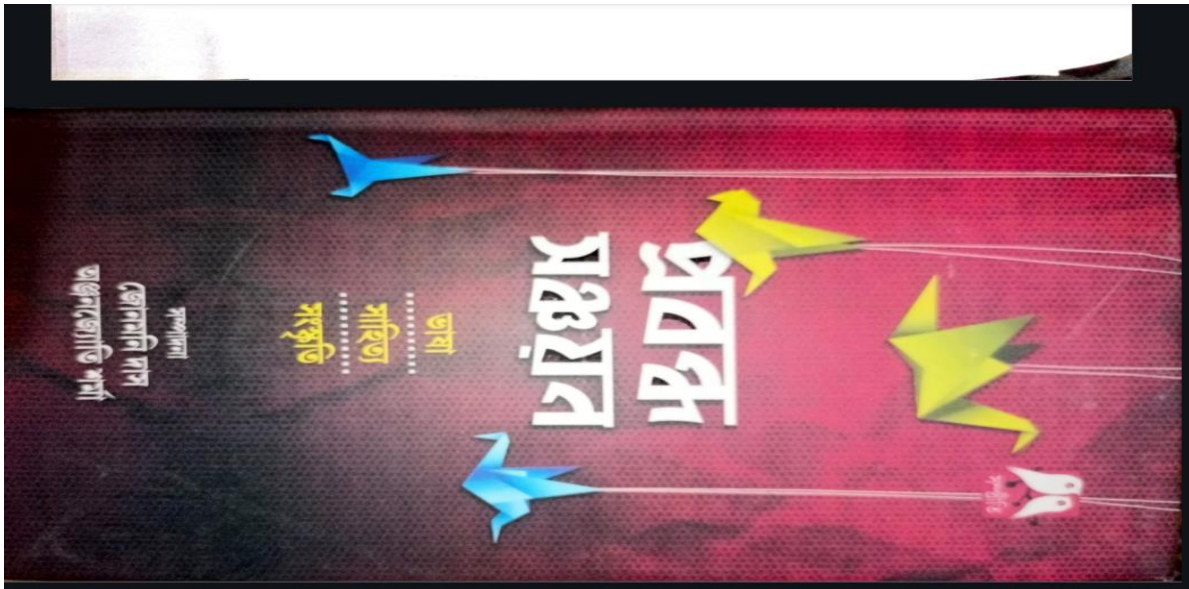

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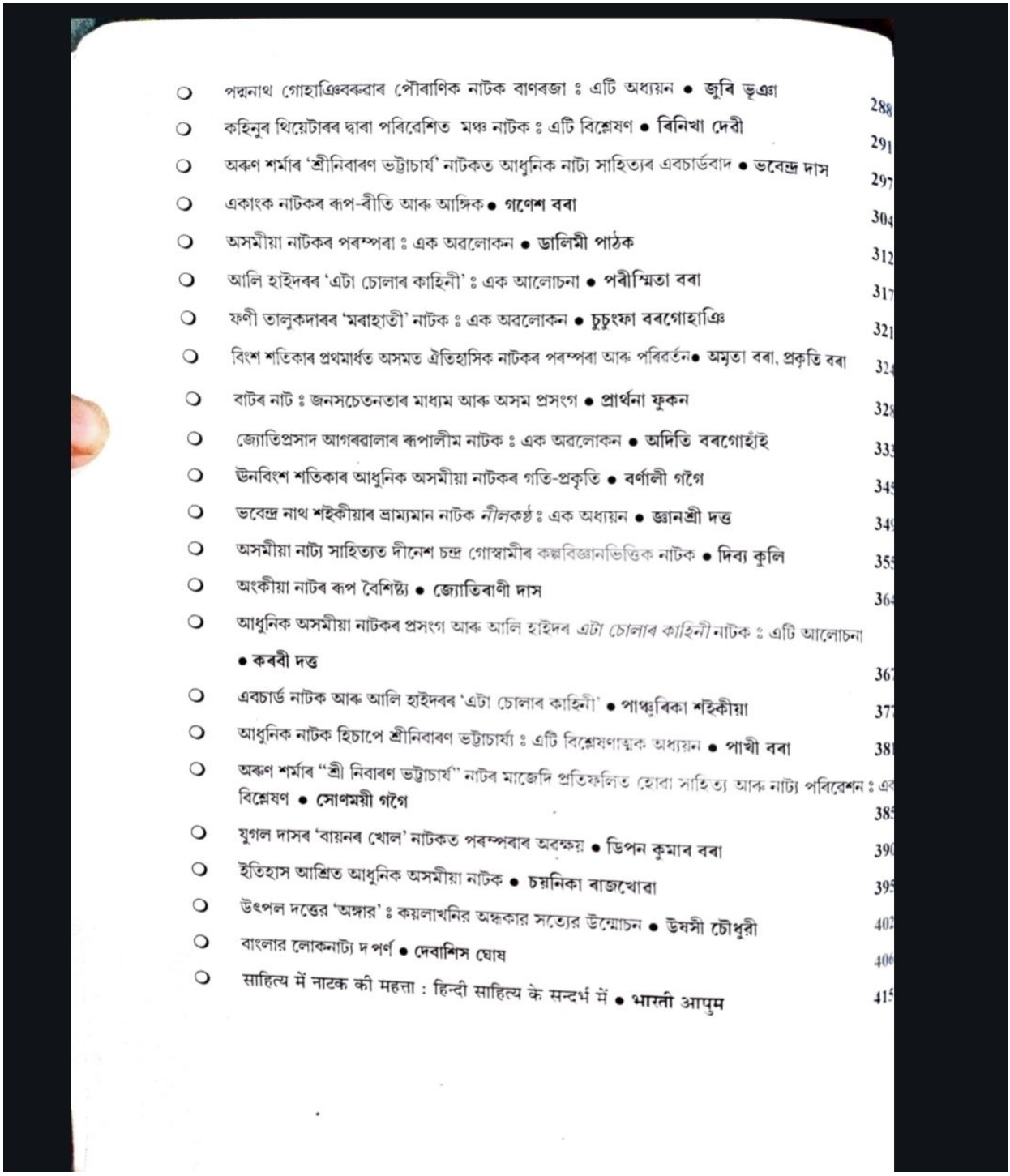

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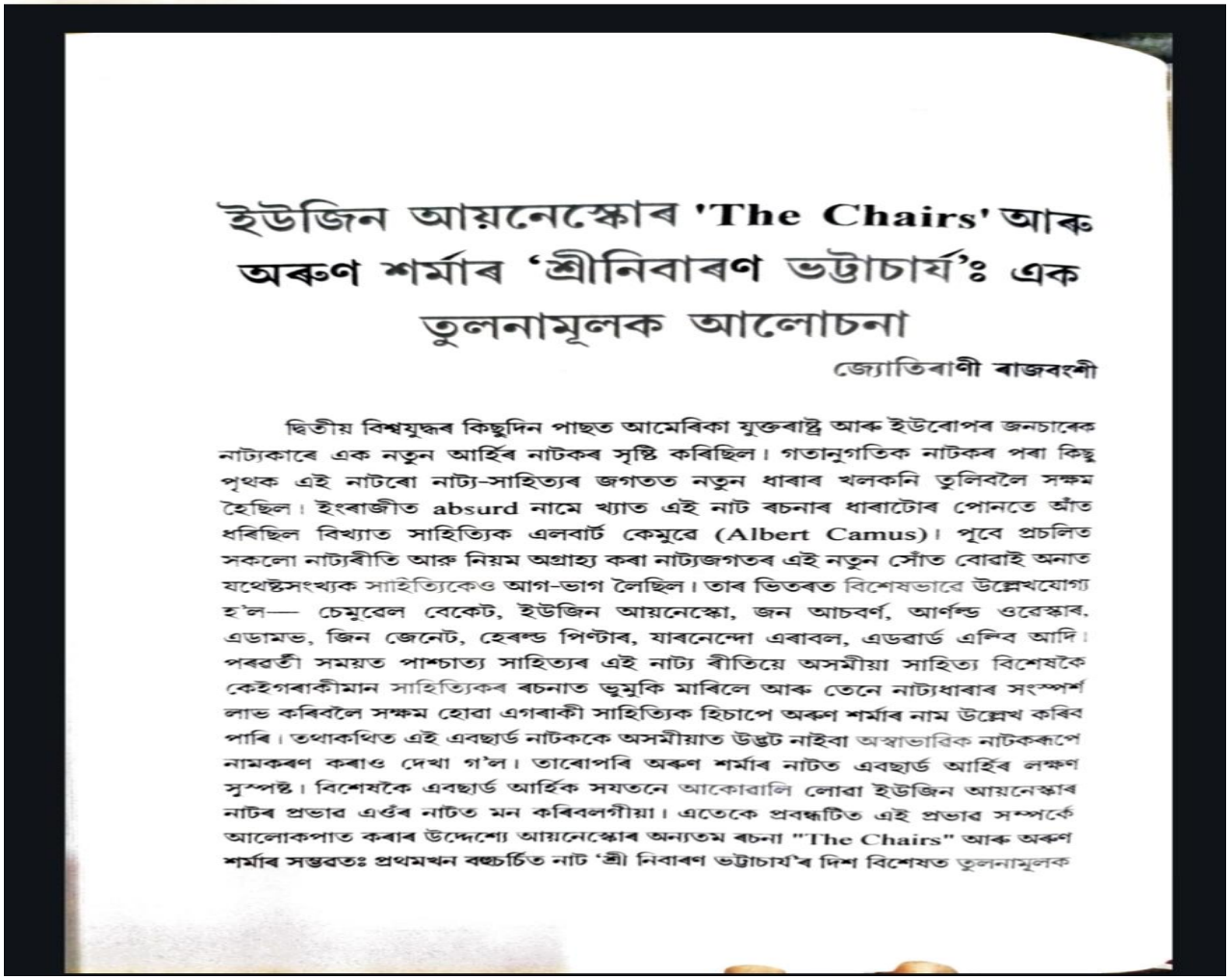

ইউজিন আয়নেস্কোৰ 'The Chairs' আৰু অৰুণ শৰ্মাৰ 'শ্ৰীনিবাৰণ ভট্টাচাৰ্য'ঃ এক তুলনামূলক আলোচনা

জ্যোতিৰাণী ৰাজবংশী

দ্বিতীয় বিশ্বযুদ্ধৰ কিছুদিন পাছত আমেৰিকা যুক্তৰাষ্ট্ৰ আৰু ইউৰোপৰ জনচাৰেক নাট্যকাৰে এক নতুন আৰ্হিৰ নাটকৰ সৃষ্টি কৰিছিল। গতানুগতিক নাটকৰ পৰা কিছু পৃথক এই নাটবোৰে নাট্য-সাহিত্যৰ জগতত নতুন ধাৰাৰ খলকনি তুলিবলৈ সক্ষম হৈছিল। ইংৰাজীত absurd নামে খ্যাত এই নাট ৰচনাৰ ধাৰাটোৰ পোনতে আঁত ধৰিছিল বিখ্যাত সাহিত্যিক এলবাৰ্ট কেমুৰে (Albert Camus)। পূৰে প্ৰচলিত সকলো নাট্যৰীতি আৰু নিয়ম অগ্ৰাহ্য কৰা নাট্যজগতৰ এই নতুন সোঁত বোৱাই অনাত যথেষ্টসংখ্যক সাহিত্যিকেও আগ-ভাগ লৈছিল। তাৰ ভিতৰত বিশেষভাৱে উল্লেখযোগ্য হ'ল— চেমুৱেল বেকেট, ইউজিন আয়নেস্কো, জন আচবৰ্ণ, আৰ্থাৰ্ড ওৱেস্কাৰ, এডামভ, জিন জেনেট, হেৰল্ড পিণ্টাৰ, যাৰনেন্দো এৰাবল, এডৱাৰ্ড এল্বি আদি। পৰৱৰ্তী সময়ত পাশ্চাত্য সাহিত্যৰ এই নাট্য ৰীতিয়ে অসমীয়া সাহিত্য বিশেষকৈ কেইগৰাকীমান সাহিত্যিকৰ ৰচনাত ভূমুকি মাৰিলে আৰু তেনে নাট্যধাৰাৰ সংস্পৰ্শ লাভ কৰিবলৈ সক্ষম হোৱা এগৰাকী সাহিত্যিক হিচাপে অৰুণ শৰ্মাৰ নাম উল্লেখ কৰিব পাৰি। তথাকথিত এই এবছাৰ্ড নাটকক অসমীয়াত উদ্ভট নাইবা অস্বাভাৱিক নাটকৰূপে নামকৰণ কৰাও দেখা গ'ল। তাৰোপৰি অৰুণ শৰ্মাৰ নাটত এবছাৰ্ড আৰ্হিৰ লক্ষণ সুস্পষ্ট। বিশেষকৈ এবছাৰ্ড আৰ্হিক সযতনে আকোৱালি লোৱা ইউজিন আয়নেস্কাৰ নাটৰ প্ৰভাৱ এওঁৰ নাটত মন কৰিবলগীয়া। এতেকে প্ৰবন্ধটিত এই প্ৰভাৱ সম্পৰ্কে আলোকপাত কৰাৰ উদ্দেশ্যে আয়নেস্কোৰ অন্যতম ৰচনা "The Chairs" আৰু অৰুণ শৰ্মাৰ সম্ভৱতঃ প্ৰথমখন বহুচৰ্চিত নাট 'শ্ৰী নিবাৰণ ভট্টাচাৰ্য'ৰ দিশ বিশেষত তুলনামূলক

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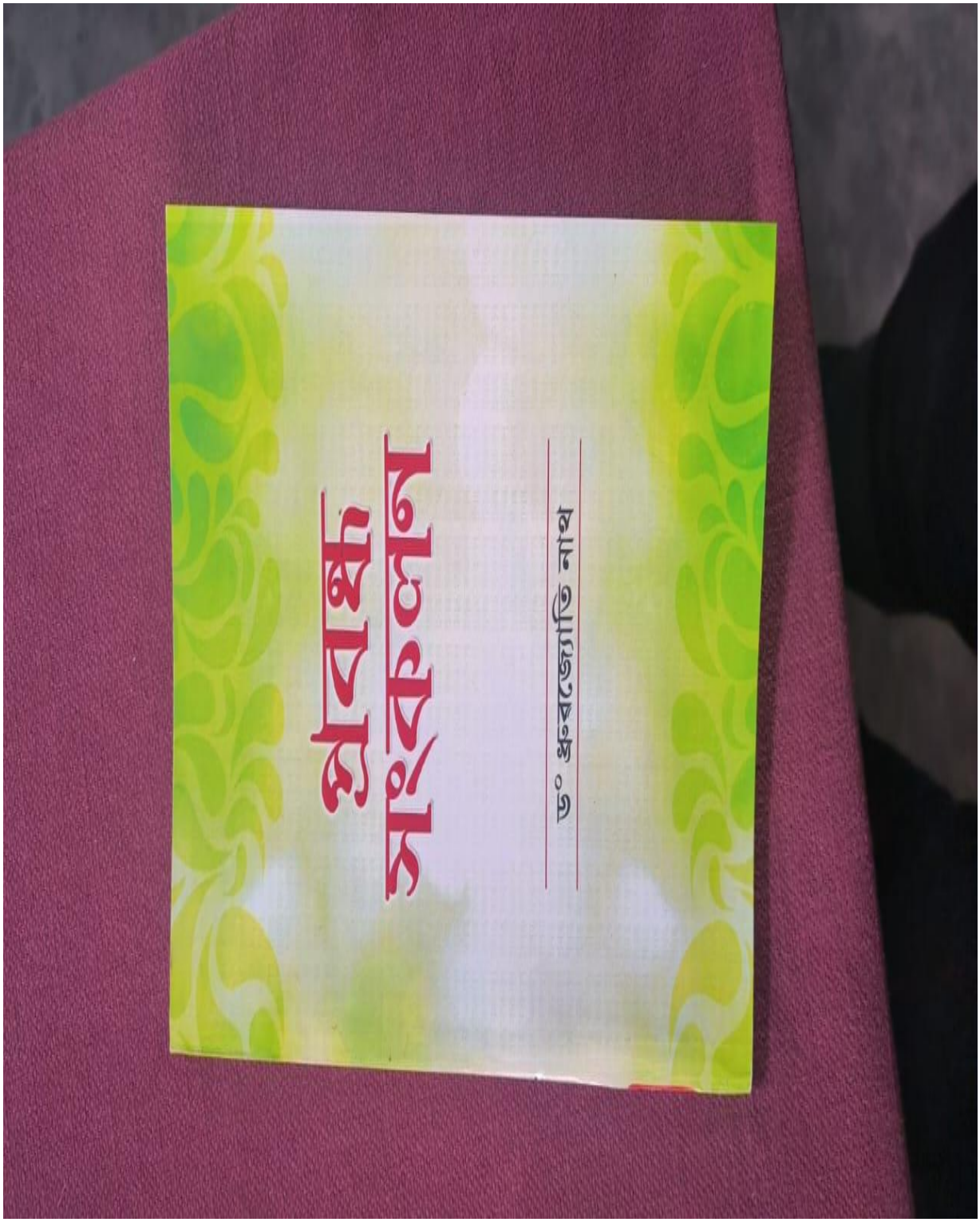

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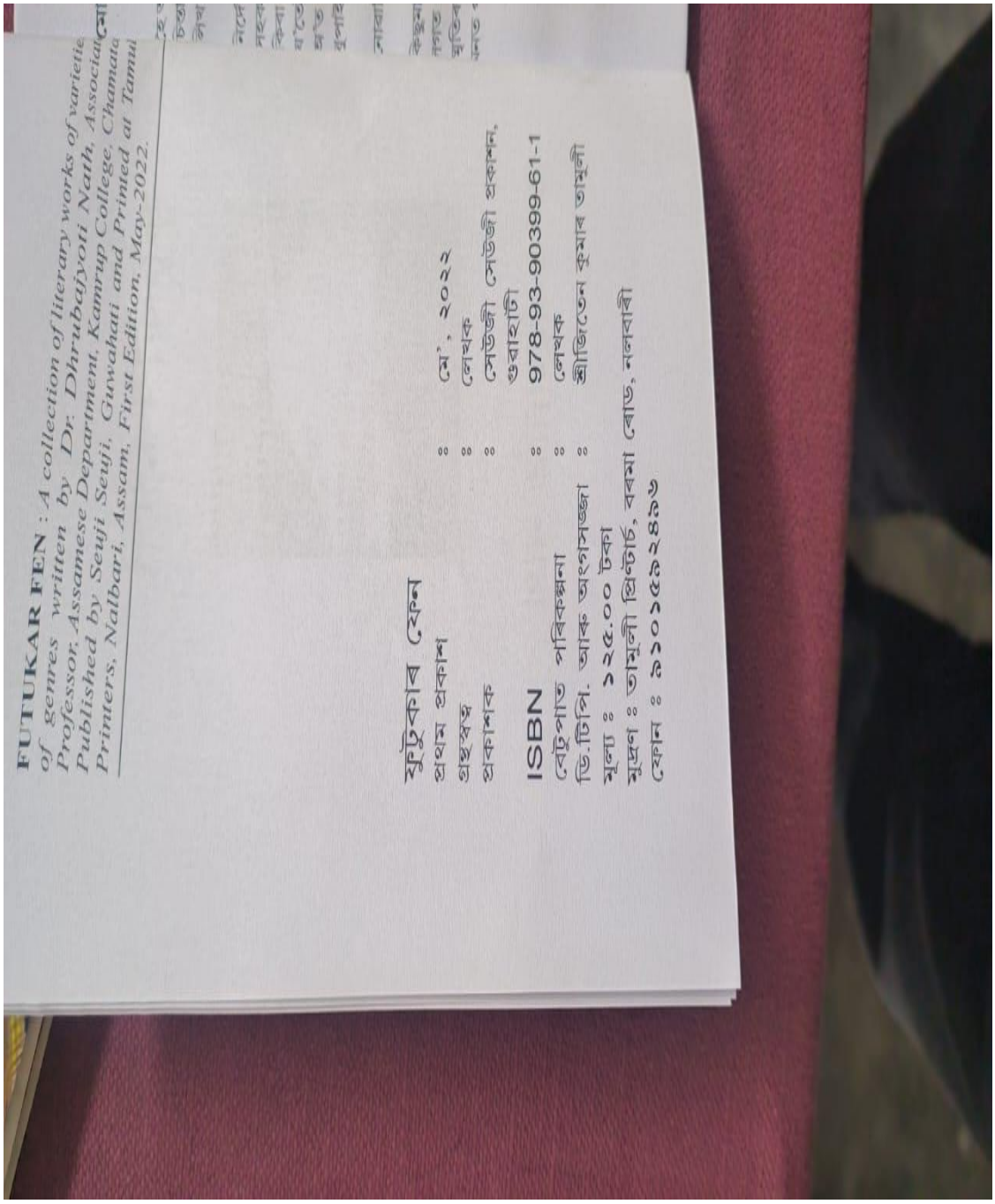

FUTUKAR FEN : *A collection of literary works of various genres written by Dr. Dhrubajyoti Nath, Associate Professor, Assamese Department, Kamrup College, Chamata. Published by Seuji Seuji, Guwahati and Printed at Tamuli Primers, Nalbari, Assam, First Edition, May-2022.*

ফুটুকাৰ ফেন

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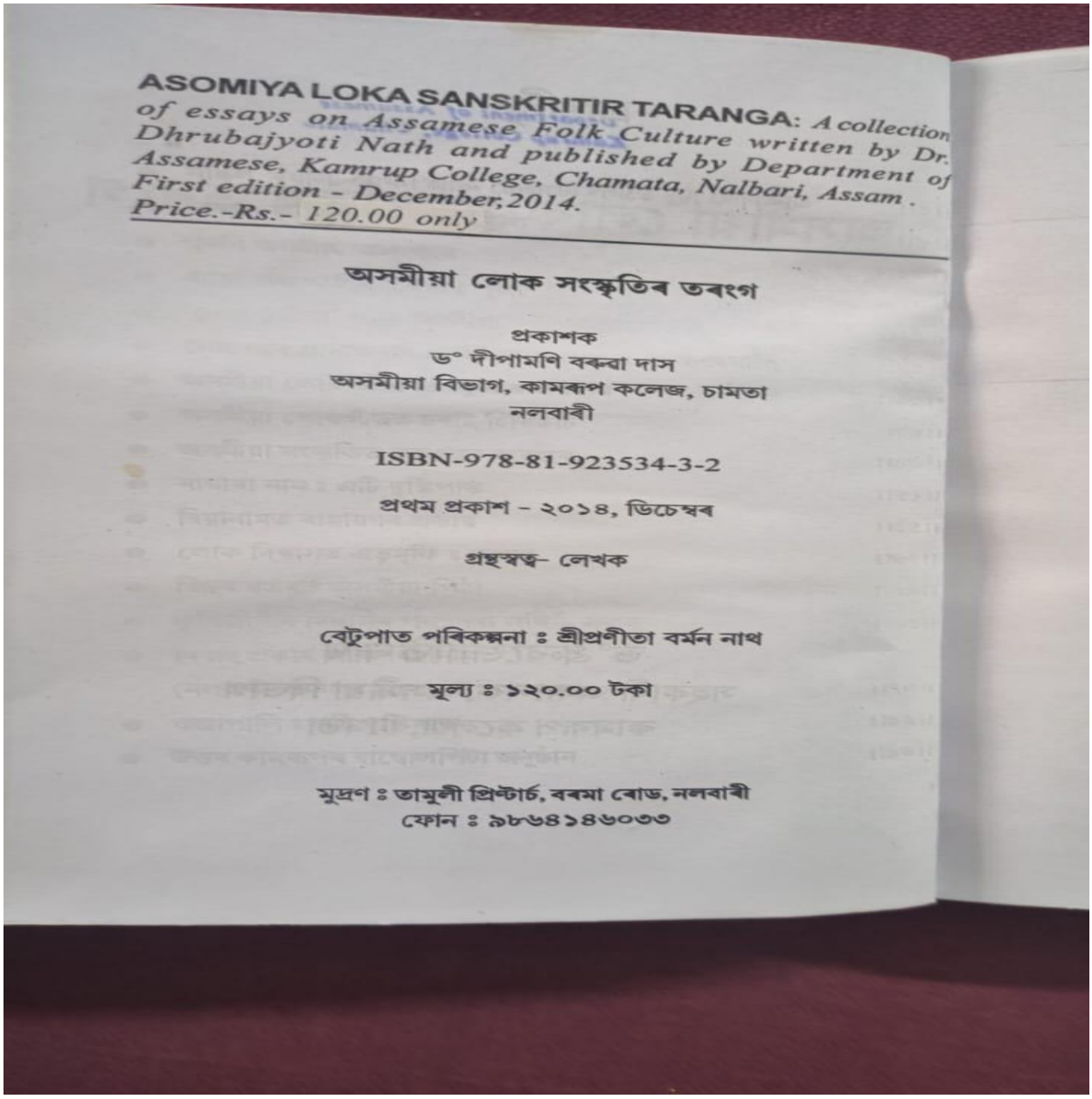

ASOMIYA LOKA SANSKRITIR TARANGA: *A collection of essays on Assamese Folk Culture written by Dr. Dhrubajyoti Nath and published by Department of Assamese, Kamrup College, Chamata, Nalbari, Assam. First edition - December, 2014. Price.-Rs.- 120.00 only*

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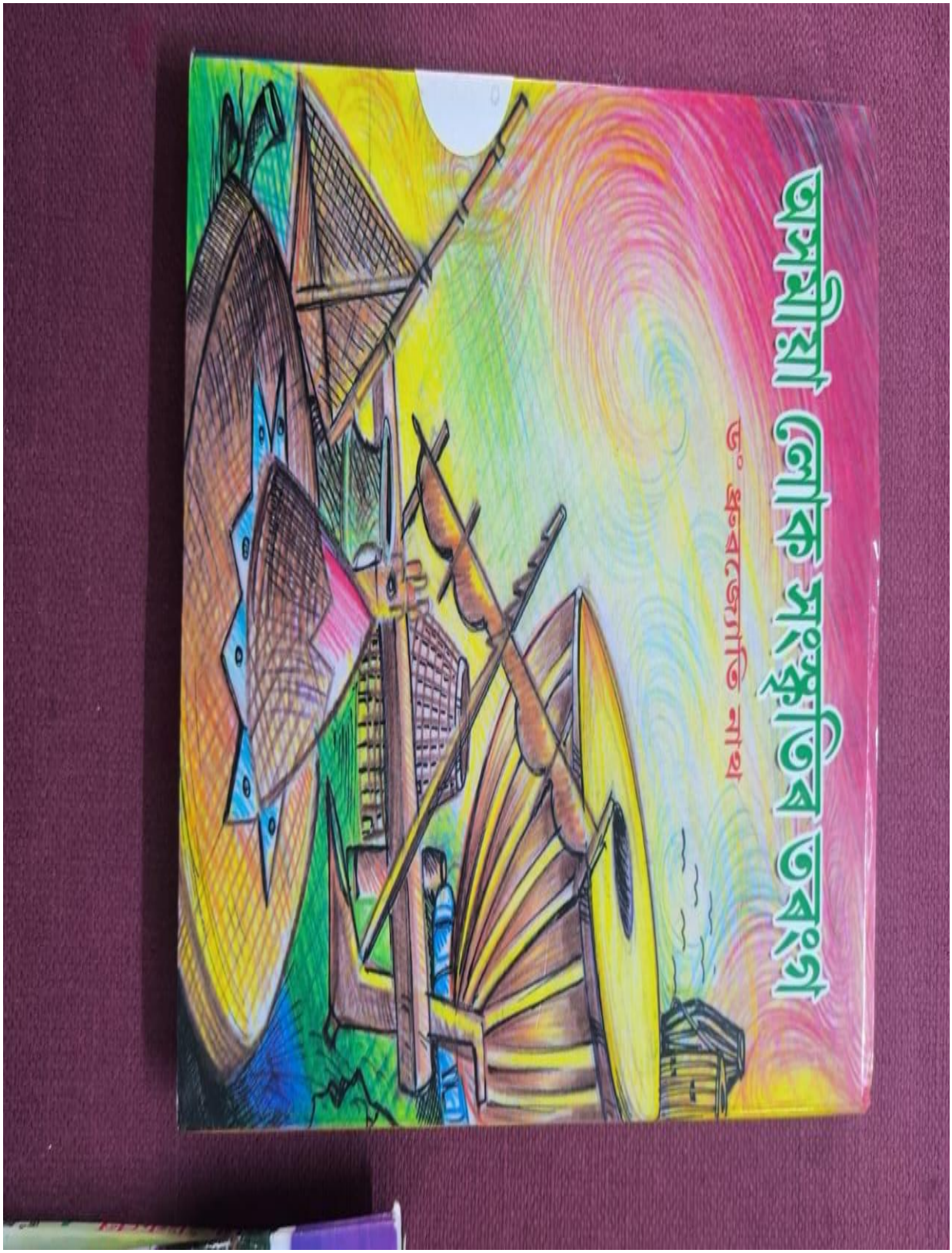

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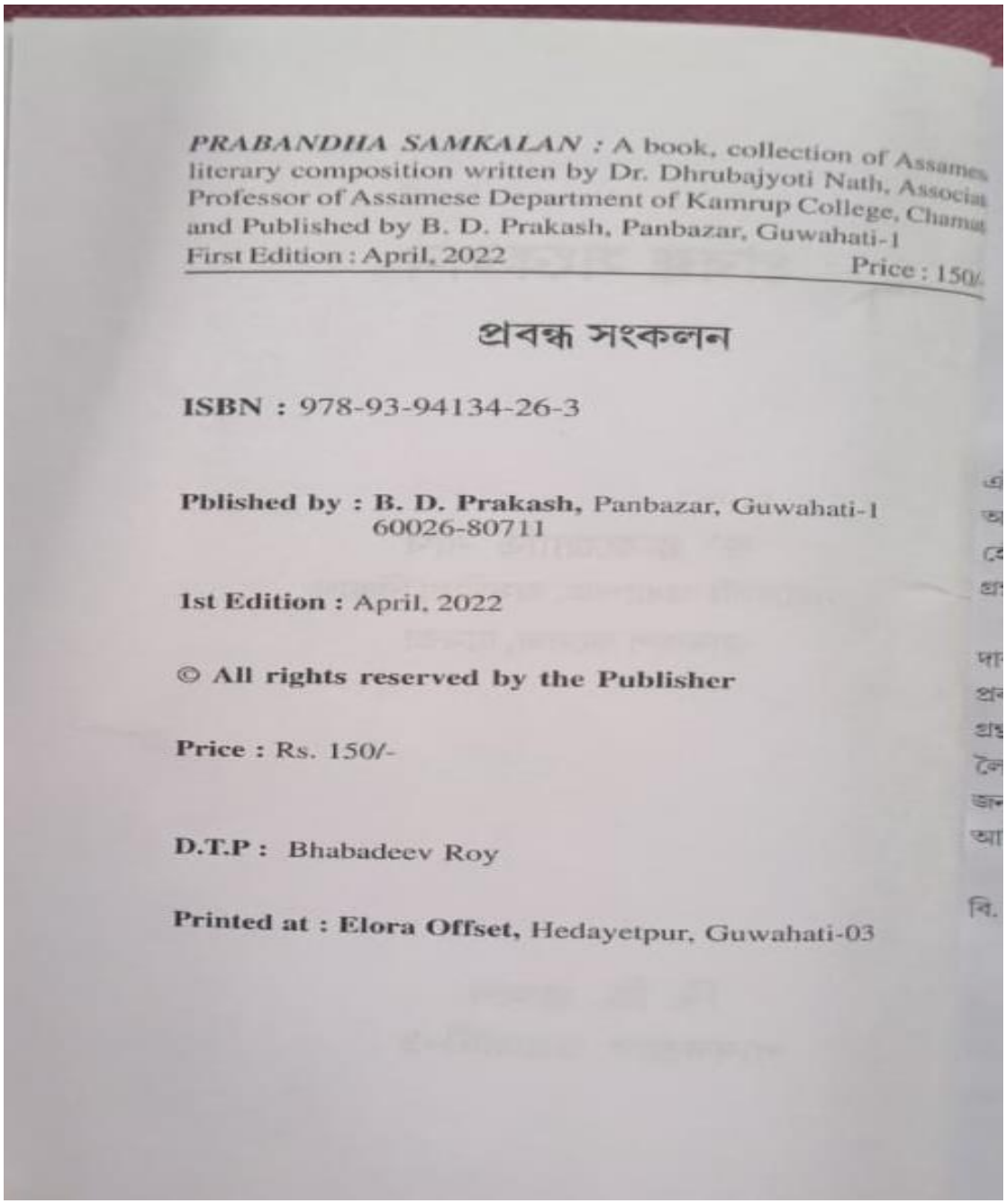

PRABANDHA SAMKALAN : A book, collection of Assames literary composition written by Dr. Dhrubajyoti Nath, Associat Professor of Assamese Department of Kamrup College, Chamat and Published by B. D. Prakash, Panbazar, Guwahati-1
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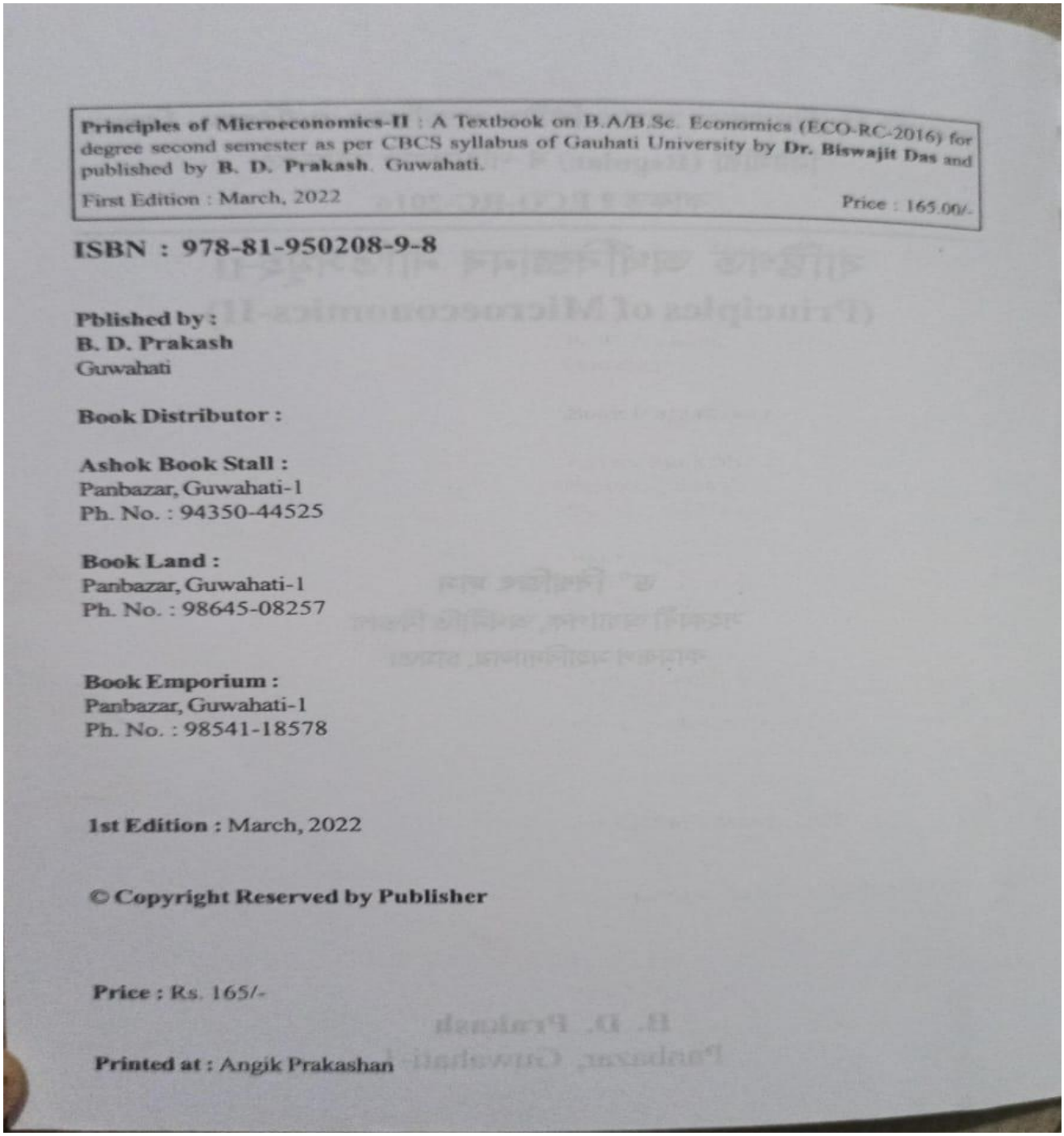

Principles of Microeconomics-II : A Textbook on B.A/B.Sc. Economics (ECO-RC-2016) for degree second semester as per CBCS syllabus of Gauhati University by **Dr. Biswajit Das** and published by **B. D. Prakash**, Guwahati.

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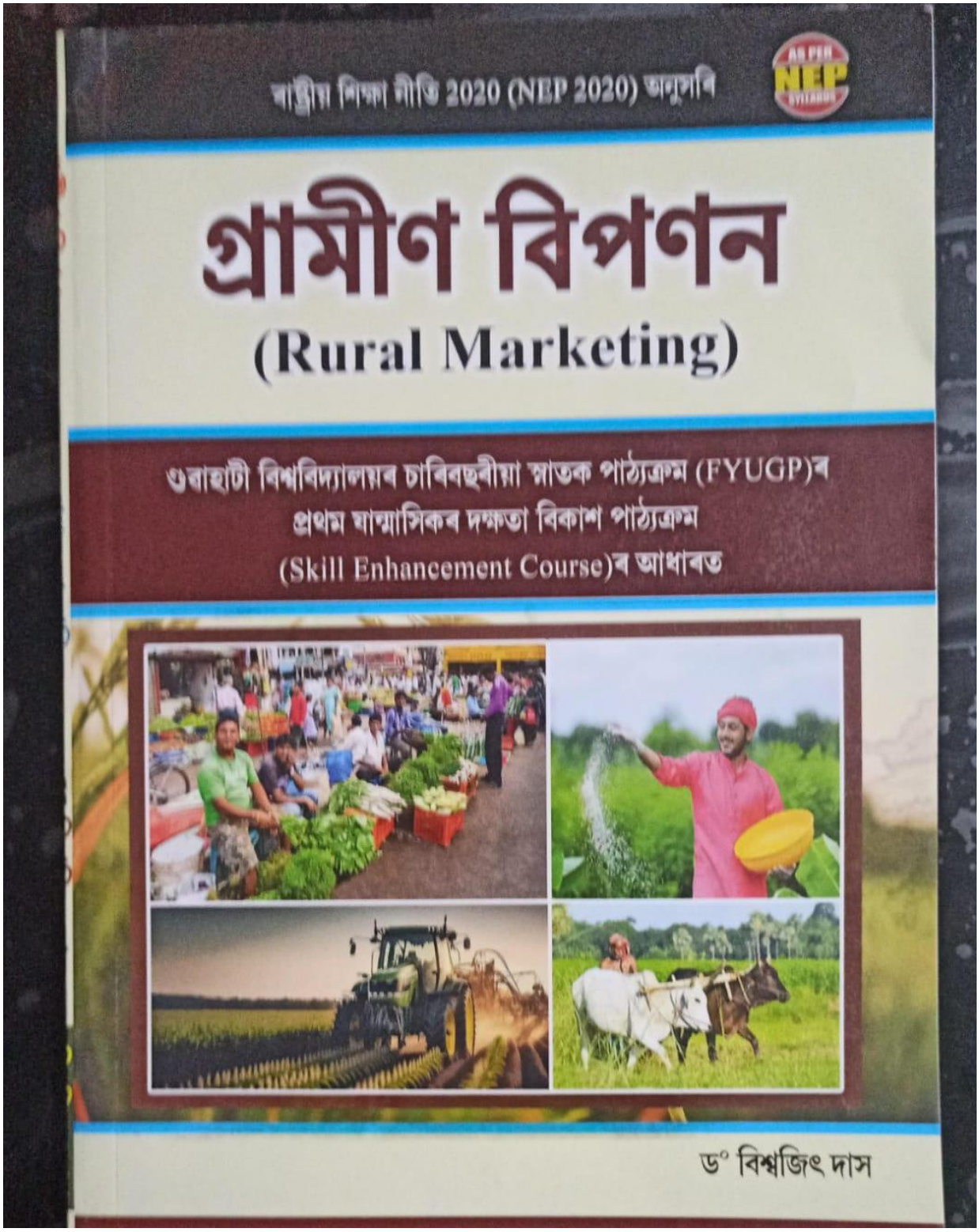

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RURAL MARKETING : A Text Book on Rural Marketing (Economics) Skill Enhancement Course (SEC) NEP 2020 FYUGP under Gauhati University writen by Dr. Biswajit Das and Publish by **B.D. Prakash**, Panbazar, Guwahati -1

1st Edition: October, 2023 Price: 160.00

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মূল্য ঃ ১৬০.০০ টকা

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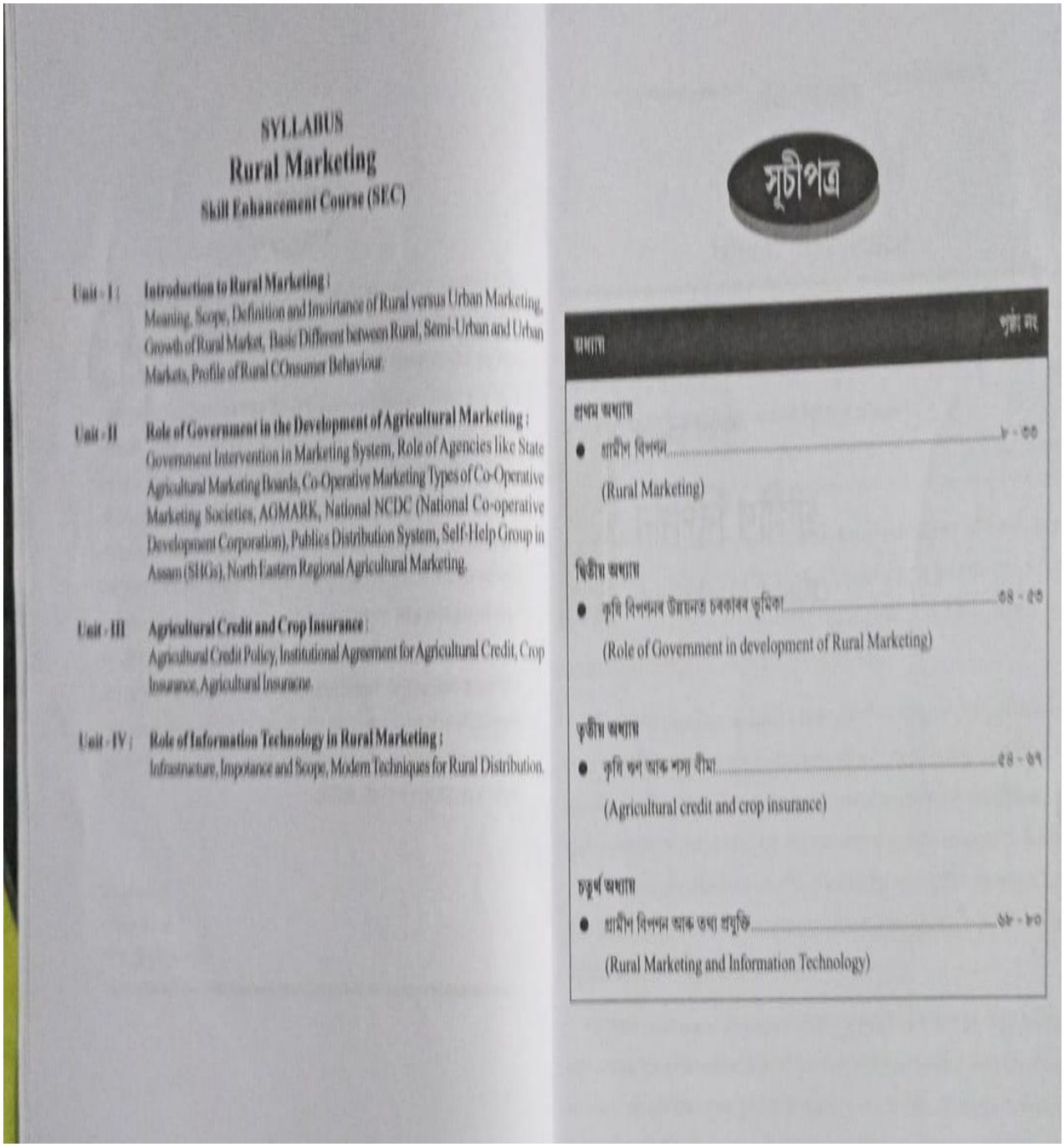

SYLLABUS

Rural Marketing

Skill Enhancement Course (SEC)

Unit - I : Introduction to Rural Marketing :
Meaning, Scope, Definition and Imoirtance of Rural versus Urban Marketing, Growth of Rural Market, Basic Different between Rural, Semi-Urban and Urban Markets, Profile of Rural COnsumer Behaviour.

Unit - II Role of Government in the Development of Agricultural Marketing :
Government Intervention in Marketing System, Role of Agencies like State Agricultural Marketing Boards, Co-Operative Marketing Types of Co-Operative Marketing Societies, AGMARK, National NCDC (National Co-operative Development Corporation), Publics Distribution System, Self-Help Group in Assam (SHGs), North Eastern Regional Agricultural Marketing.

Unit - III Agricultural Credit and Crop Insurance :
Agricultural Credit Policy, Institutional Agreement for Agricultural Credit, Crop Insurance, Agricultural Insurance.

Unit - IV : Role of Information Technology in Rural Marketing :
Infrastructure, Impotance and Scope, Modern Techniques for Rural Distribution.

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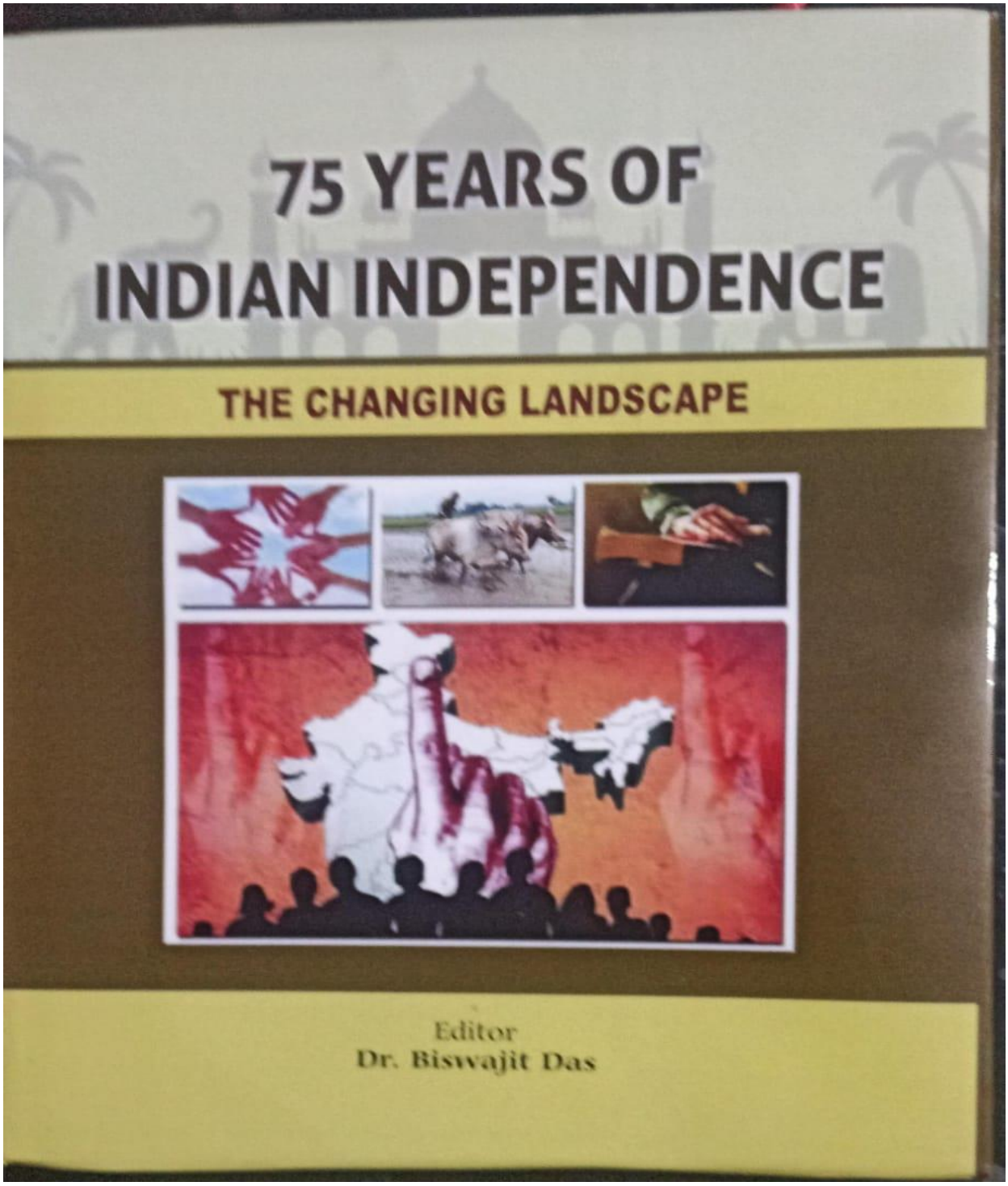

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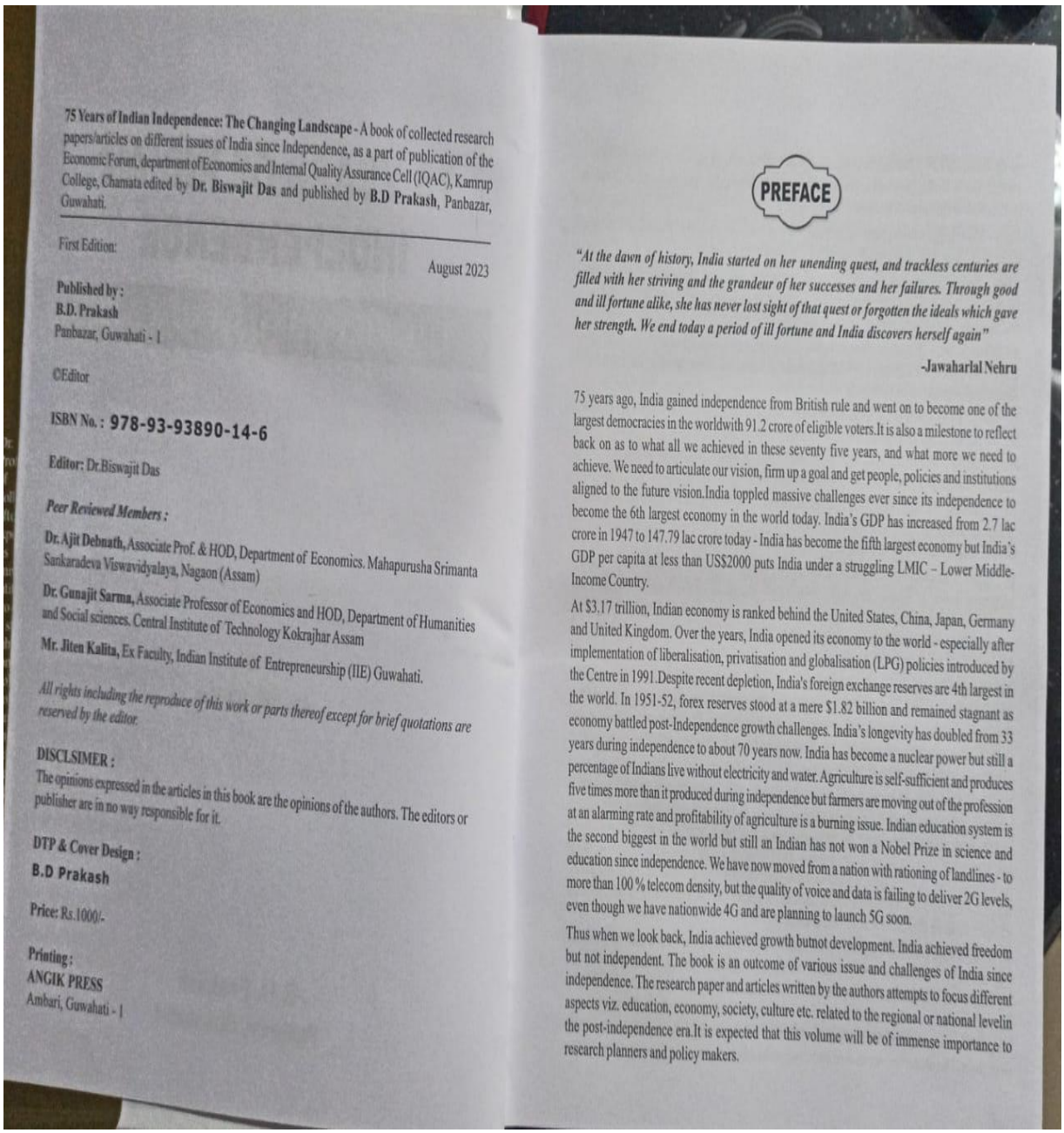

75 Years of Indian Independence: The Changing Landscape - A book of collected research papers/articles on different issues of India since Independence, as a part of publication of the Economic Forum, department of Economics and Internal Quality Assurance Cell (IQAC), Kamrup College, Chamata edited by **Dr. Biswajit Das** and published by **B.D Prakash**, Panbazar, Guwahati.

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PREFACE

"At the dawn of history, India started on her unending quest, and trackless centuries are filled with her striving and the grandeur of her successes and her failures. Through good and ill fortune alike, she has never lost sight of that quest or forgotten the ideals which gave her strength. We end today a period of ill fortune and India discovers herself again"

-Jawaharlal Nehru

75 years ago, India gained independence from British rule and went on to become one of the largest democracies in the worldwith 91.2 crore of eligible voters.It is also a milestone to reflect back on as to what all we achieved in these seventy five years, and what more we need to achieve. We need to articulate our vision, firm up a goal and get people, policies and institutions aligned to the future vision.India toppled massive challenges ever since its independence to become the 6th largest economy in the world today. India's GDP has increased from 2.7 lac crore in 1947 to 147.79 lac crore today - India has become the fifth largest economy but India's GDP per capita at less than US$2000 puts India under a struggling LMIC – Lower Middle-Income Country.

At $3.17 trillion, Indian economy is ranked behind the United States, China, Japan, Germany and United Kingdom. Over the years, India opened its economy to the world - especially after implementation of liberalisation, privatisation and globalisation (LPG) policies introduced by the Centre in 1991.Despite recent depletion, India's foreign exchange reserves are 4th largest in the world. In 1951-52, forex reserves stood at a mere $1.82 billion and remained stagnant as economy battled post-Independence growth challenges. India's longevity has doubled from 33 years during independence to about 70 years now. India has become a nuclear power but still a percentage of Indians live without electricity and water. Agriculture is self-sufficient and produces five times more than it produced during independence but farmers are moving out of the profession at an alarming rate and profitability of agriculture is a burning issue. Indian education system is the second biggest in the world but still an Indian has not won a Nobel Prize in science and education since independence. We have now moved from a nation with rationing of landlines - to more than 100 % telecom density, but the quality of voice and data is failing to deliver 2G levels, even though we have nationwide 4G and are planning to launch 5G soon.

Thus when we look back, India achieved growth butnot development. India achieved freedom but not independent. The book is an outcome of various issue and challenges of India since independence. The research paper and articles written by the authors attempts to focus different aspects viz. education, economy, society, culture etc. related to the regional or national levelin the post-independence era.It is expected that this volume will be of immense importance to research planners and policy makers.

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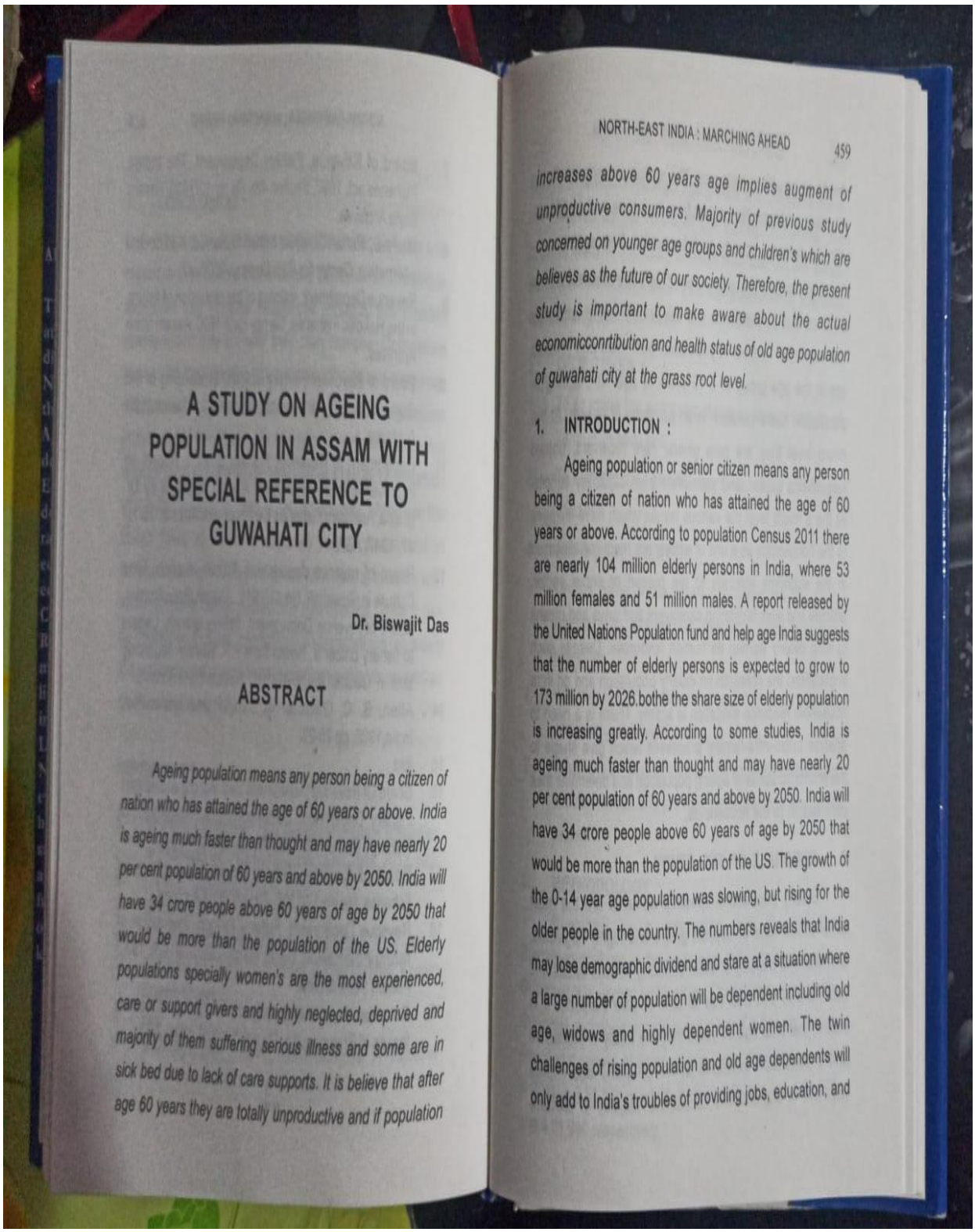

A STUDY ON AGEING POPULATION IN ASSAM WITH SPECIAL REFERENCE TO GUWAHATI CITY

Dr. Biswajit Das

ABSTRACT

Ageing population means any person being a citizen of nation who has attained the age of 60 years or above. India is ageing much faster than thought and may have nearly 20 per cent population of 60 years and above by 2050. India will have 34 crore people above 60 years of age by 2050 that would be more than the population of the US. Elderly populations specially women's are the most experienced, care or support givers and highly neglected, deprived and majority of them suffering serious illness and some are in sick bed due to lack of care supports. It is believe that after age 60 years they are totally unproductive and if population

increases above 60 years age implies augment of unproductive consumers. Majority of previous study concerned on younger age groups and children's which are believes as the future of our society. Therefore, the present study is important to make aware about the actual economiccontribution and health status of old age population of guwahati city at the grass root level.

1. INTRODUCTION :

Ageing population or senior citizen means any person being a citizen of nation who has attained the age of 60 years or above. According to population Census 2011 there are nearly 104 million elderly persons in India, where 53 million females and 51 million males. A report released by the United Nations Population fund and help age India suggests that the number of elderly persons is expected to grow to 173 million by 2026.bothe the share size of elderly population is increasing greatly. According to some studies, India is ageing much faster than thought and may have nearly 20 per cent population of 60 years and above by 2050. India will have 34 crore people above 60 years of age by 2050 that would be more than the population of the US. The growth of the 0-14 year age population was slowing, but rising for the older people in the country. The numbers reveals that India may lose demographic dividend and stare at a situation where a large number of population will be dependent including old age, widows and highly dependent women. The twin challenges of rising population and old age dependents will only add to India's troubles of providing jobs, education, and

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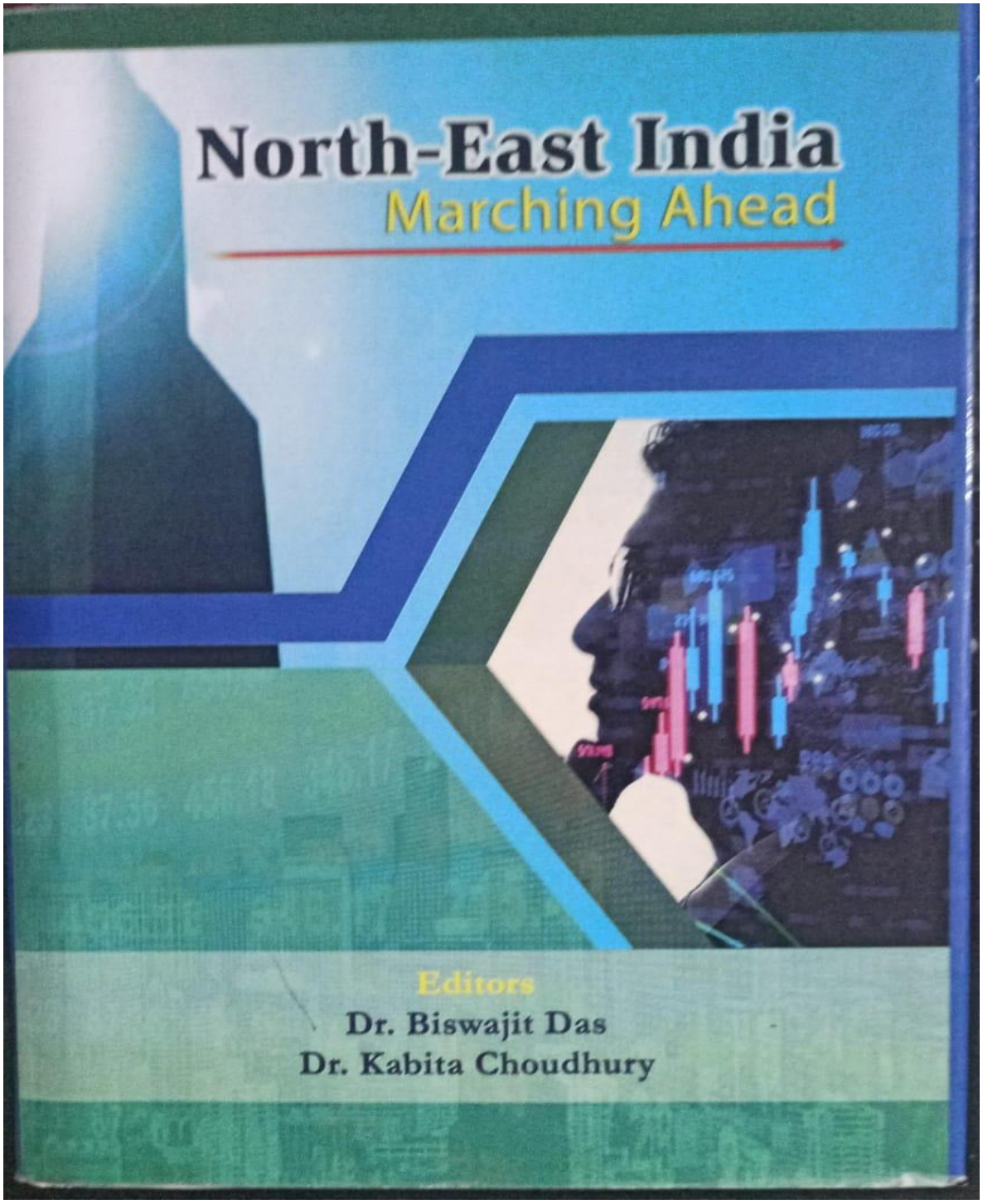

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National Education Policy 2020: Issues, Challenges and Opportunities

Dr. Biswajit Das

Abstract

Different countries in the world uses different education systems with due regard to culture and traditions and take different stages during their life cycle at school and college education levels to make it work. A well-defined education policy and the future is important for the country at school and college levels because of the fact that education leads to economic and social development. The National Education Policy 2020 (NEP 2020), approved by the Indian Union Cabinet on July 29, 2020, sets out the vision for India's new education system. The new policy replaces the old National Education Policy, 1986. This policy is a comprehensive framework for primary education towards higher education and vocational training in rural and urban areas of India. This policy aims to transform India's education system by 2021. Shortly after the policy was released, the government made it clear that no one would be forced to learn any particular language and that the method of teaching would not be diverted from English to any regional language. Against this background the paper attempts to focus on various issues, challenges and opportunitiesof NEP 2020.

Key words :
NEP-2020, Higher Education, National Education Policy 2020, Overview and Analysis, Implementation Strategies, Methods, Challenges, Opportunities for NEP 2020

INTRODUCTION

NEP 2020 replaces the National Education Policy of 1986. In January 2015, a committee under former Cabinet Secretary T. S. R. Subramanian initiated a process to discuss the New Education Policy. Based on the committee report, in JOune 2017, the draft NEP was submitted in 2019 by a panel led by former Indian Space Research Organization (ISRO) chief executive

KrishnaswamyKasturirangan. The New Education Policy Framework (DNEP) for 2019 was later released by the Department of Human Resource Development, followed by numerous public hearings. The T74 Draft NEP had 484 pages. The Department has undergone a strong consultation process in the formulation of the policy framework: "More than 2 lakh proposals from 2.5 lakh gram panchayats, 6,600 blocks, 6,000 Urban Local Bodies (ULBs), 676 districts were approved."The Union Cabinet has approved the new National Education Policy 2020 with an aim to introduce several changes in the Indian education system – from the school to the college level.

- Its aims at making "India a global knowledge superpower".
- The Cabinet has also approved the renaming of the Ministry of Human Resource Development to the Ministry of Education.
- The New Education Policy cleared by the Cabinet is only the third major revamp of the framework of education in India since independence.
- The two earlier education policies were brought in 1968 and 1986.

India, as a fast-growing free country of change in education, currently has about 845 universities and about 40,000 higher education institutions (HIEs), reflecting the total diversity and the many small HEIs in the country connected to these universities. It has been found that more than 40% of these small institutions use a single system for me against the expected transformation of the multi-sectoral higher education system which is an important need for educational change in the 21st century. It was also noted that more than 20% of colleges are enrolled annually with less than 100 students making it impossible to improve the quality of education and only 4% of colleges enrol more than 3,000 students per year due to regional inequality and level of education. They give. Some of the reasons found for the collapse of the higher education system (HE) in India are: It is predicted that India will be the third largest in the world in 2030-2032 with a GDP of about ten billion dollars. It is clear that the ten billion economies will be driven by sources of information and not natural resources. To boost India's education sector growth, the current government has decided to revive it by introducing the National Education Policy 2020. This is in line with the latest call by the Prime Minister to use the Fourth Industrial Revolution to move India to a higher level. The newly launched National Education Policy 2020 has a vision for a India-focused education program that directly contributes to transforming our nation into a society of equal and living knowledge, by providing quality education for all.

Features of National Education Policy 2020 :

The National Education Policy as submitted by the Kasturirangan Committee submitted an education policy that seeks to address the challenges facing the existing education system like: Quality, Affordability, Equity, Access and Accountability.

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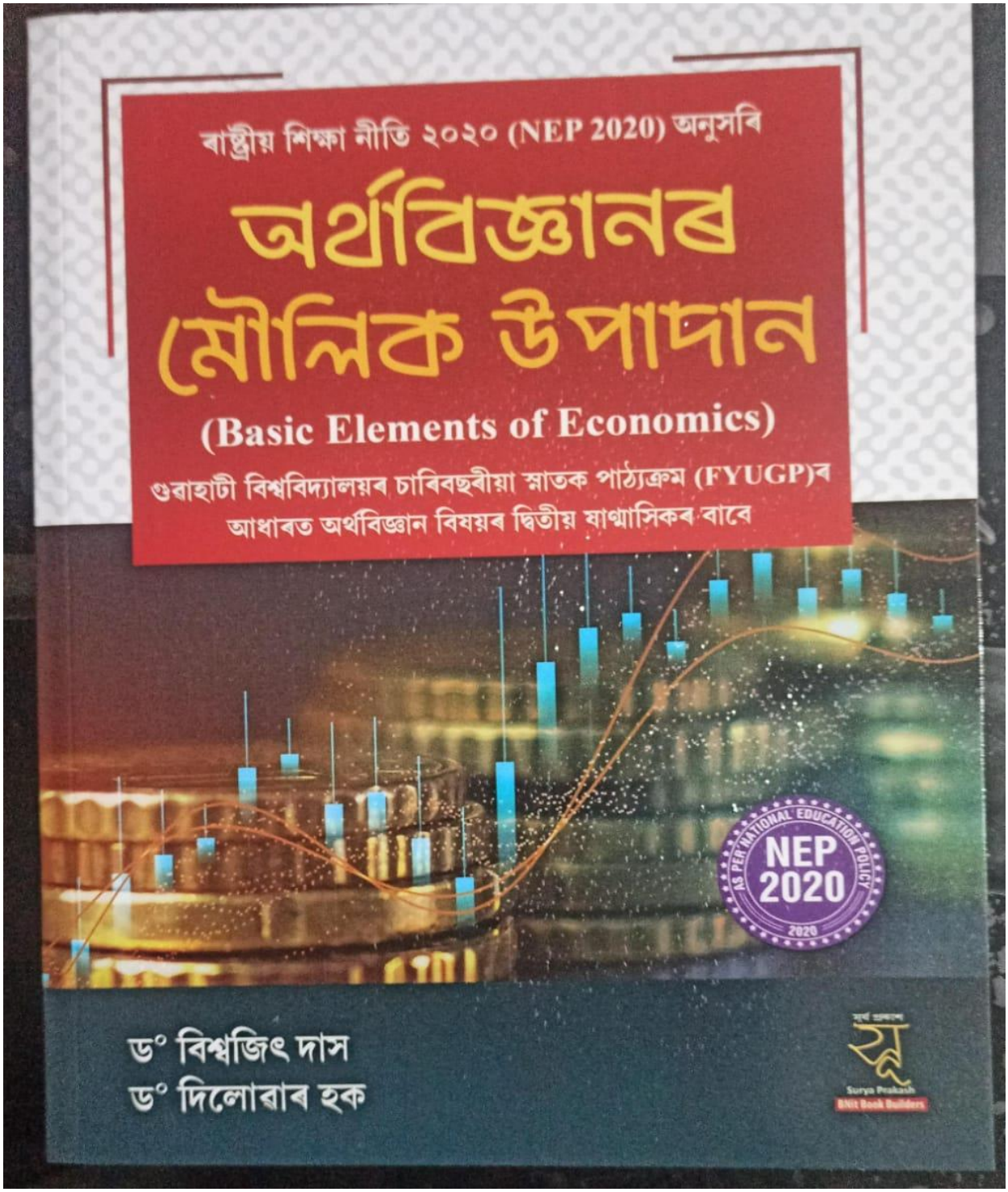

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5	Basic features of Indian economy, Trend of national and per capita income, Sector-wise composition of GDP, Basic demographic features - age, sex composition, density, urbanization, Labour force and Work force and Participation rate, Unemployment, OccupationalPattern, Demographic Dividend.	20/12

Readings :

A.N. Agarwal: Indian Economy - Problems of Development and Planning, New Age International Publishers

B. V. Pathak: Indian Financial System, Pearson Education, Singapore.

Debraj Roy: Development Economics

Michael P.Todaro, Stephen C. Smith: Economic Development

Padmalochan Hazarika: Statistical Methods for Economics, Ashok book Stall

S.C. Gupta: Fundamentals of Statistics, Himalayas Publishing House, Seventh Edition

S.K.Misra, V.K Puri: Economics of Development and Planning

V.K.Puri and S.K.Mishra: Indian Economy, Himalay Publishing House

William G. Cochran: Sampling Techniques, John Wiley, 2007.

Course Objective :

The course is designed to introduce the students to the basic ideas of Development Economics, Statistics, Indian economy and elements of the financial system. The focus will be on exposing the students to the various issues of the global and national economy along with the basic statistical tools for analysing these issues.

Graduate Attributes :

At the end of the course, the students will be able to:

- Understand and critically evaluate the various measures of development
- Use and apply the relevant statistical tools to systematically examine any given economic phenomenon
- Describe and analyse the Indian economy in terms of its income and demographic features
- Understand the functioning of a financial system
- Relate and analyse the current events of the global and national economy

Prerequisites : -

Theory Credit : 4

Number of required classes

Number of contact classes: 50

Number of non-contact classes: 10

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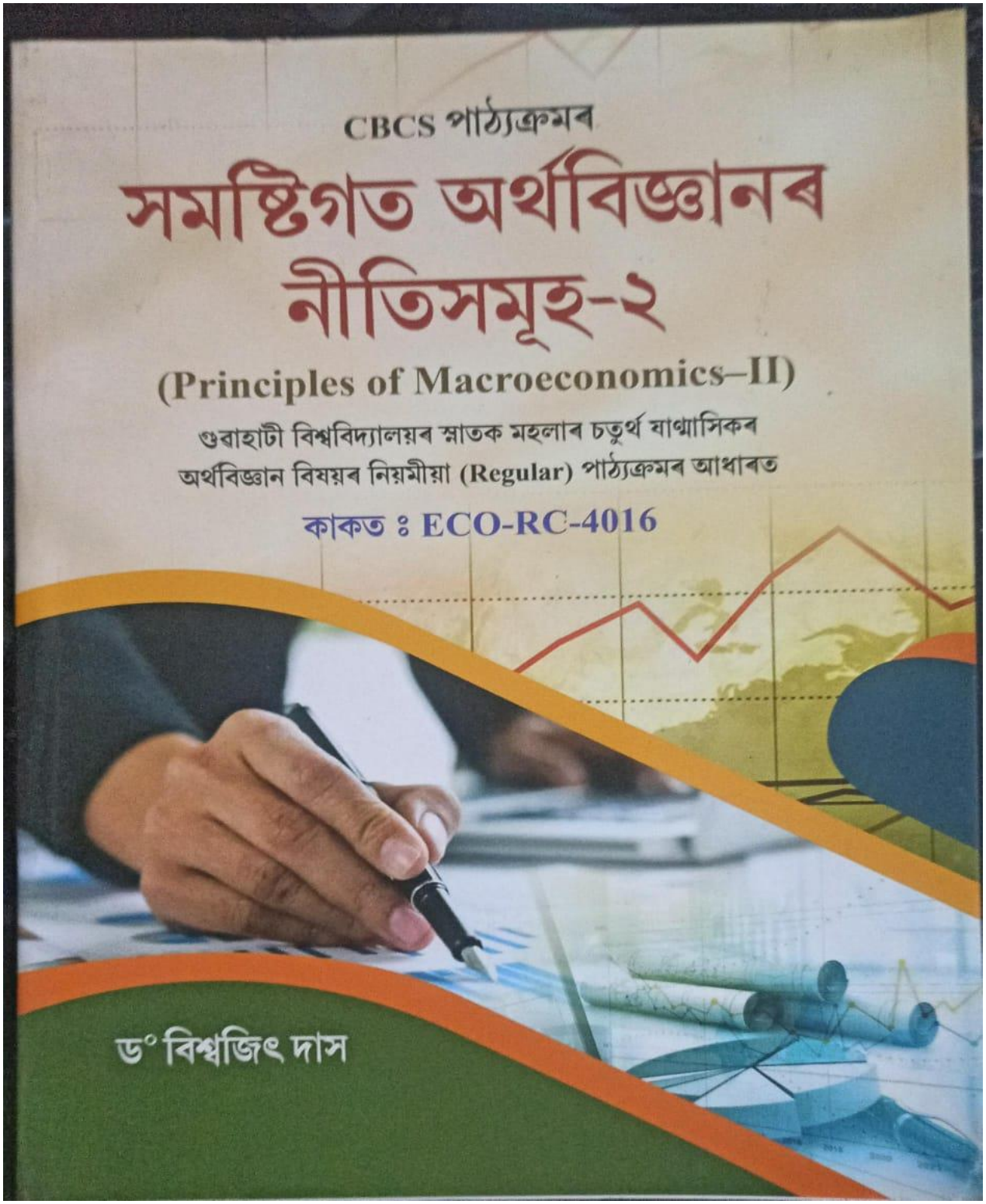

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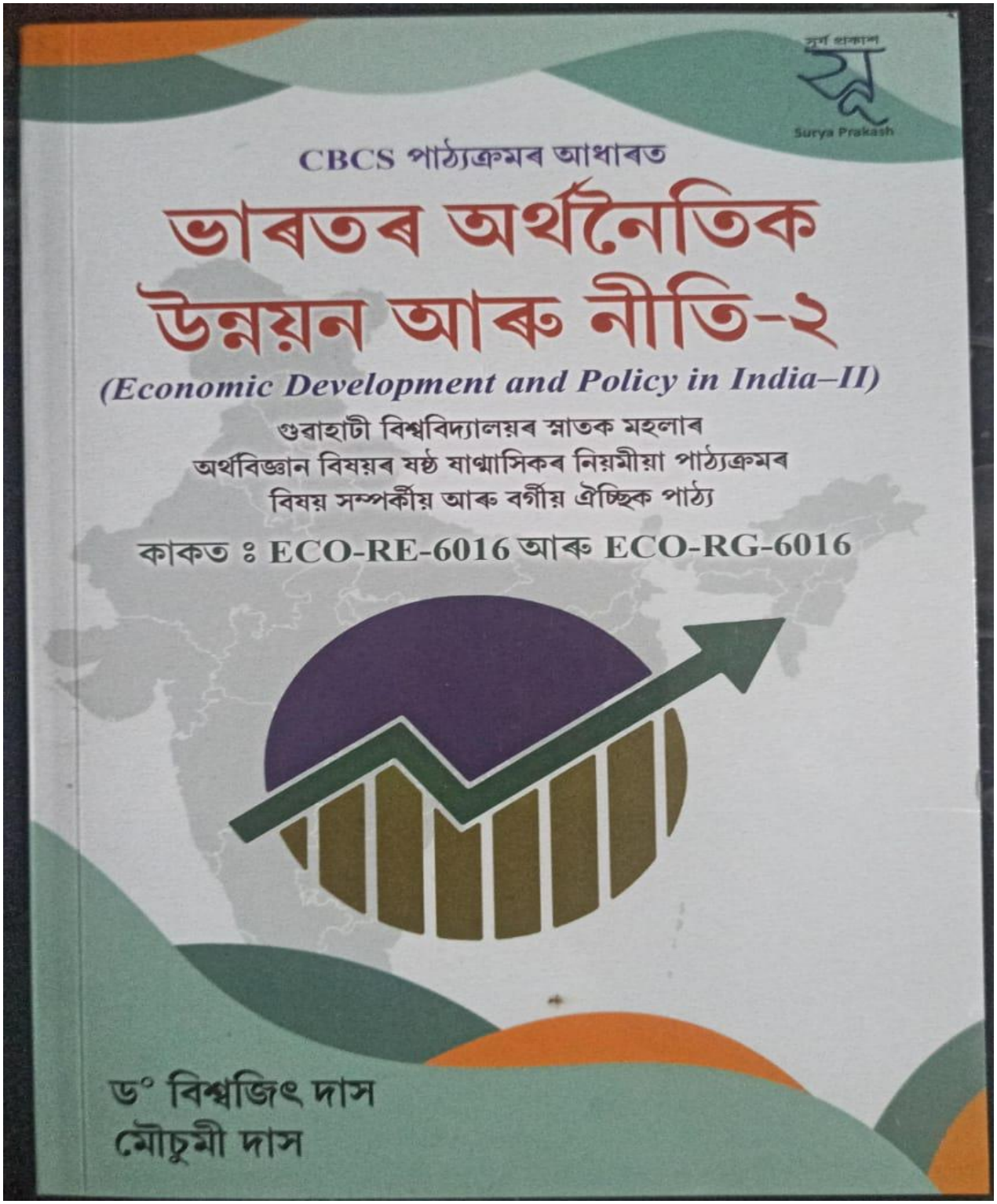

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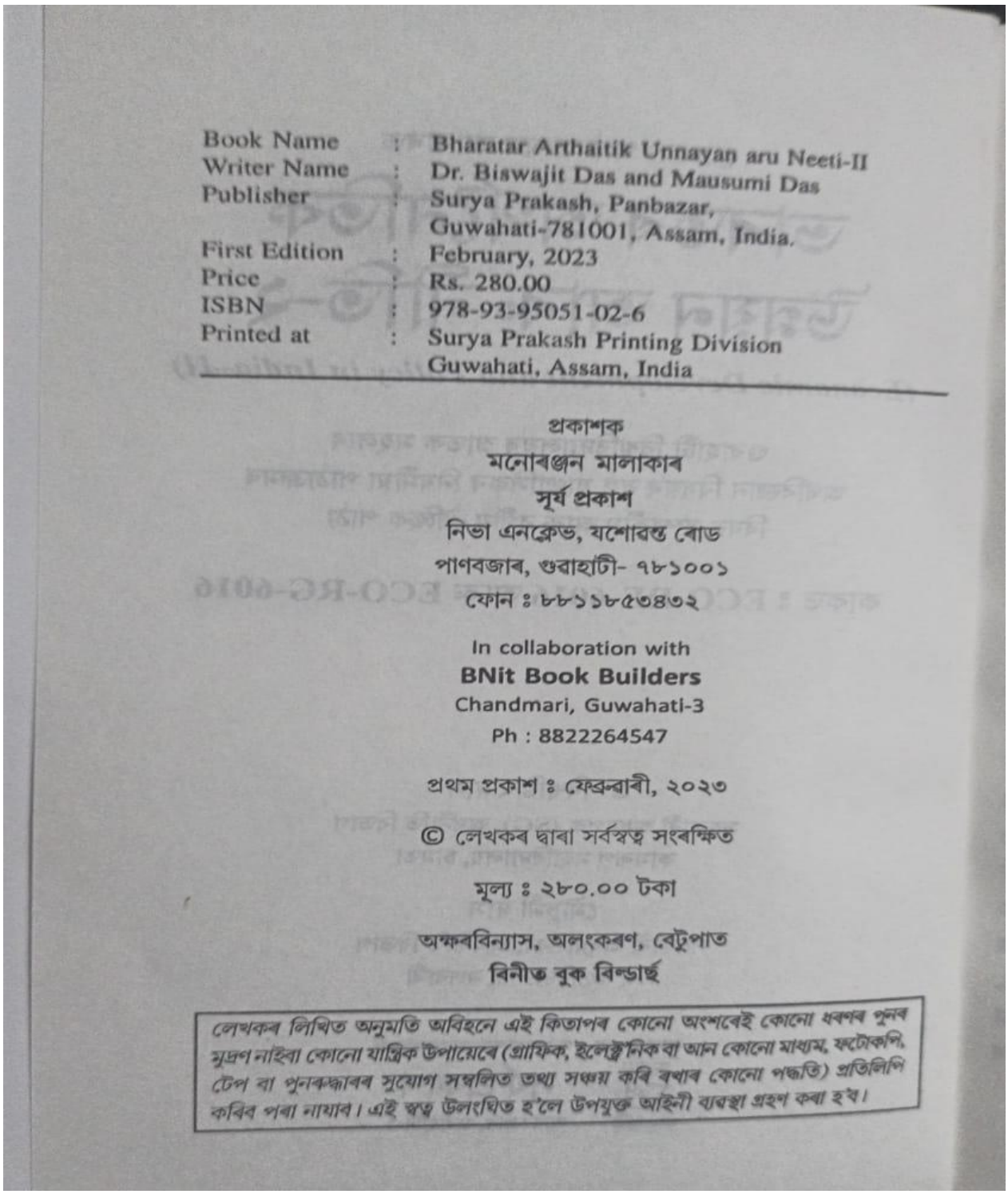

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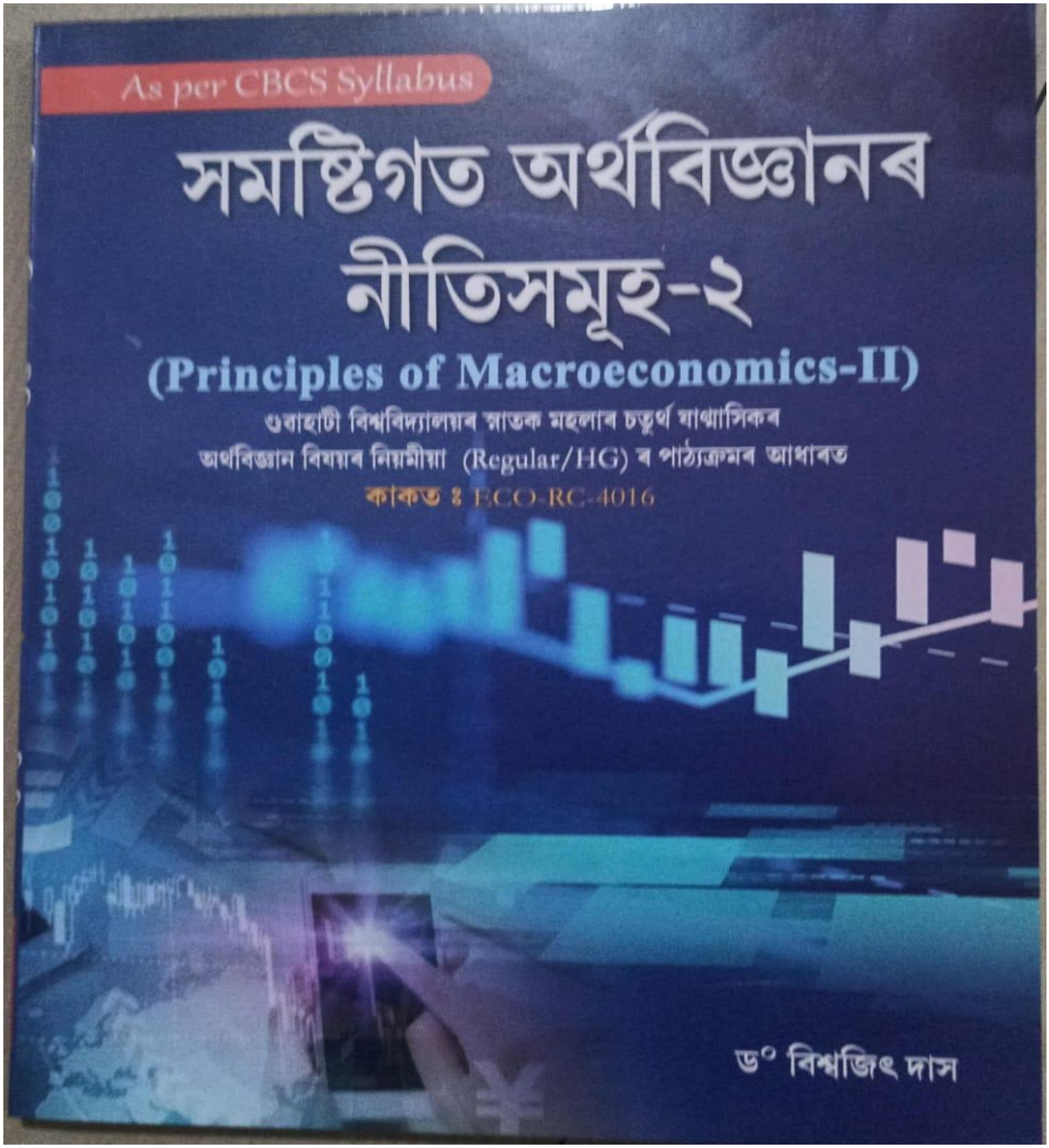

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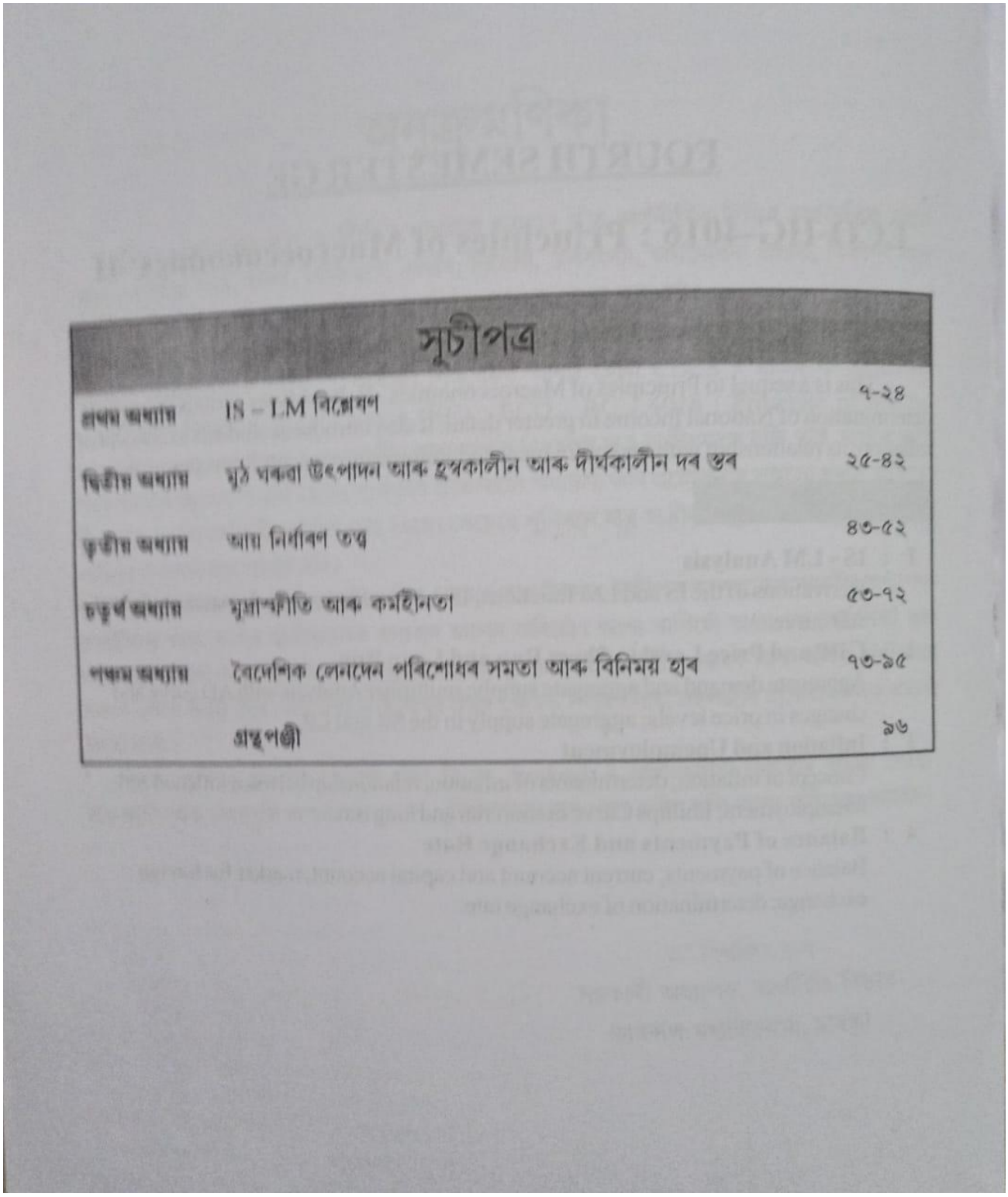

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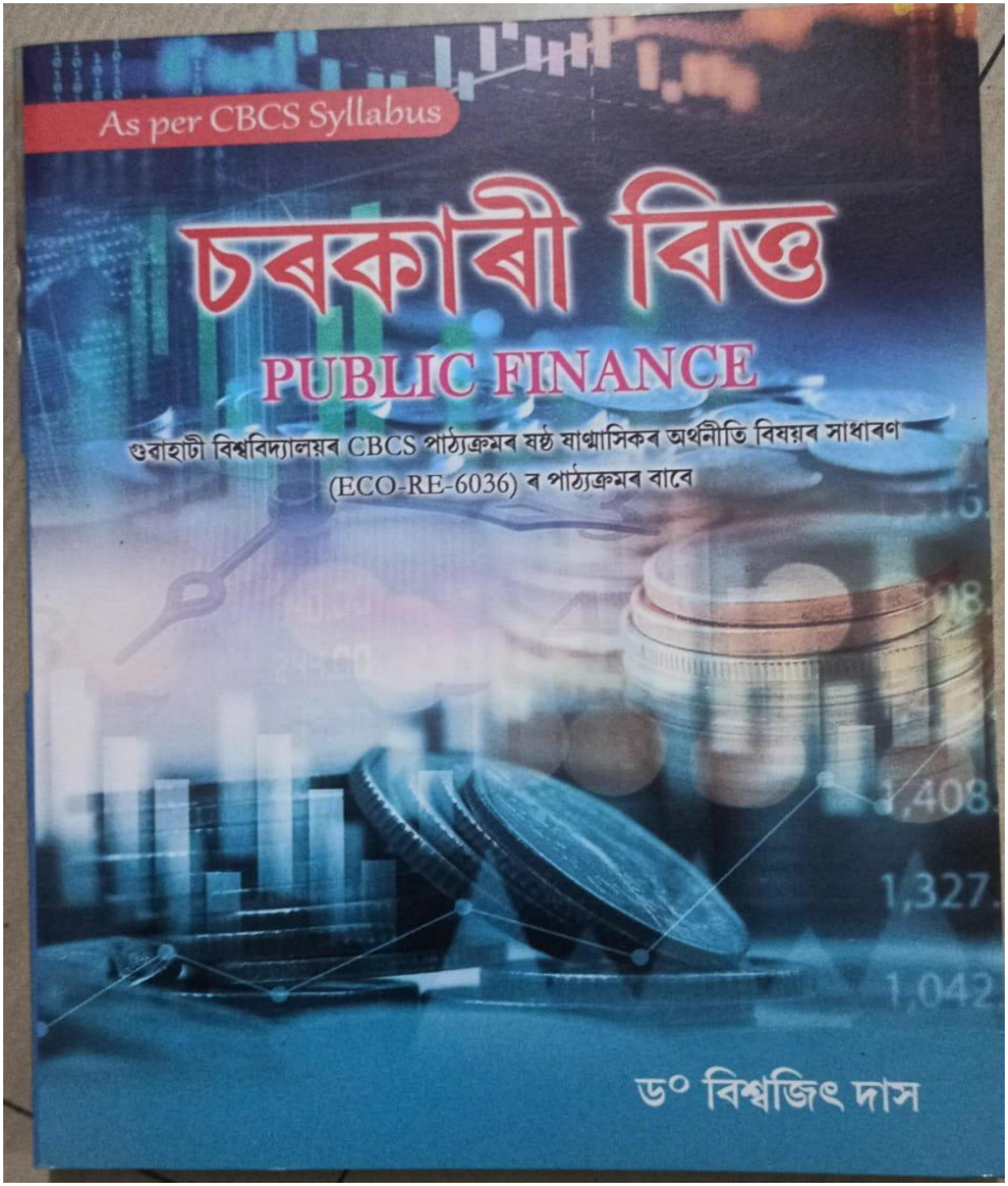

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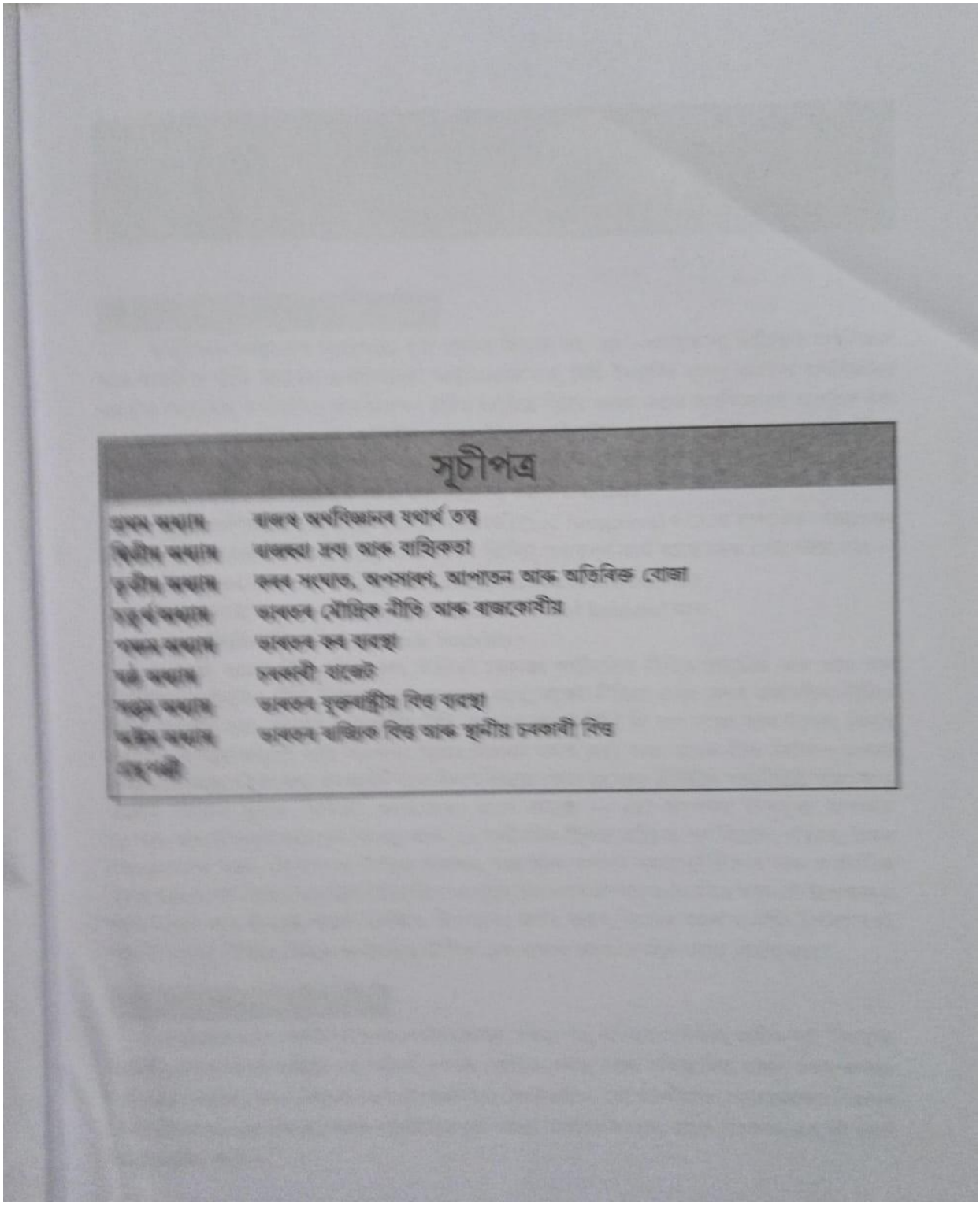

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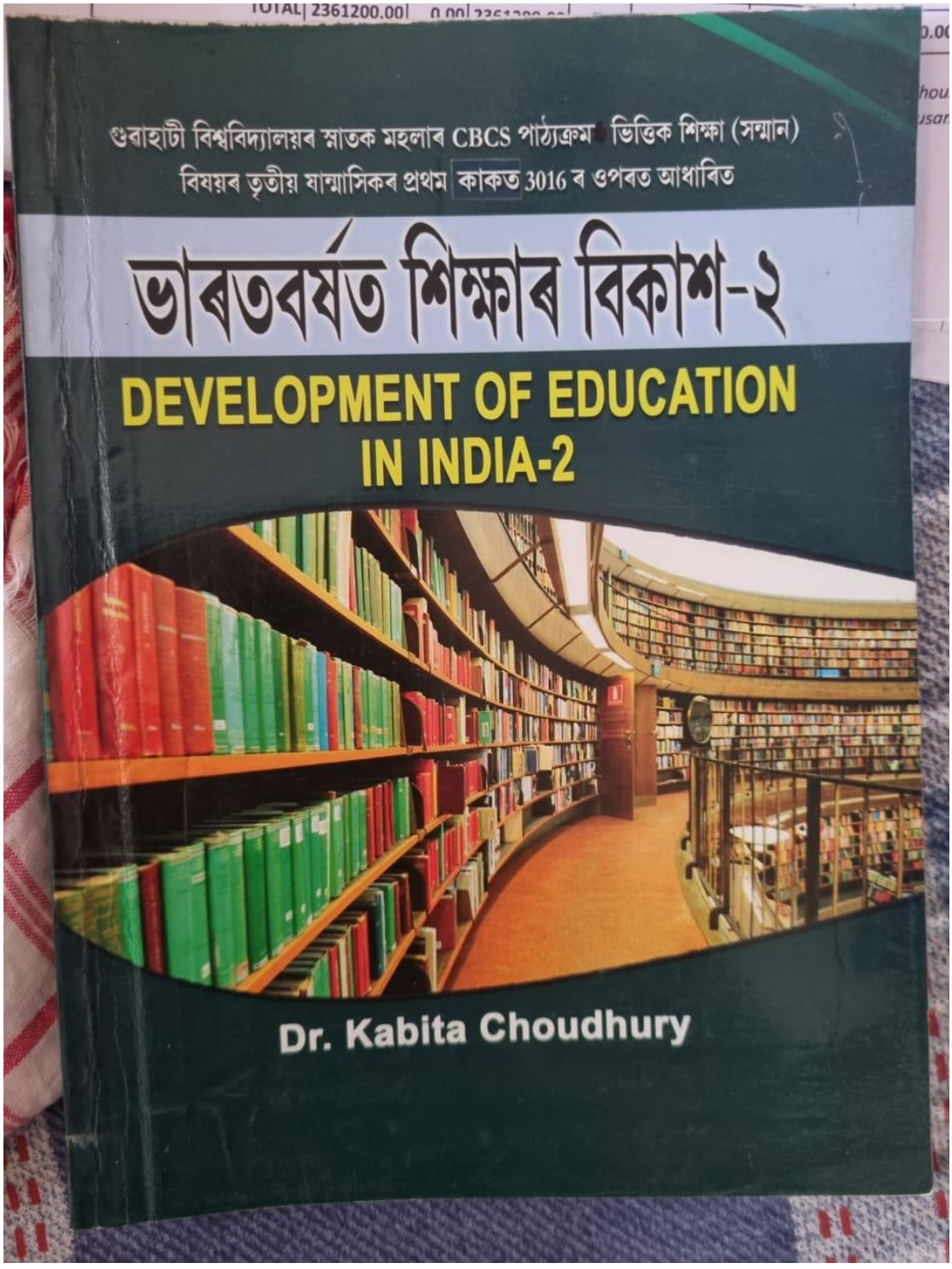

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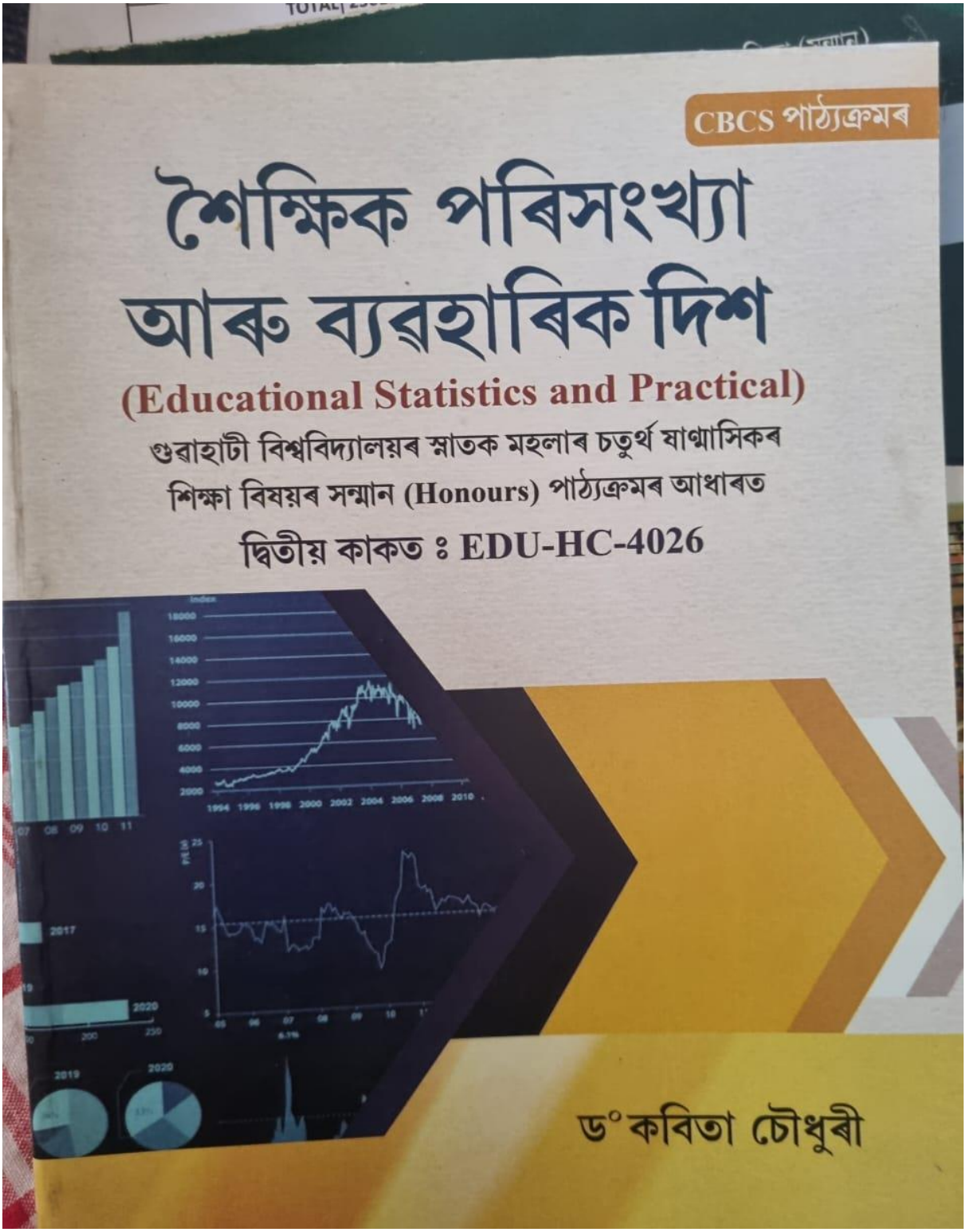

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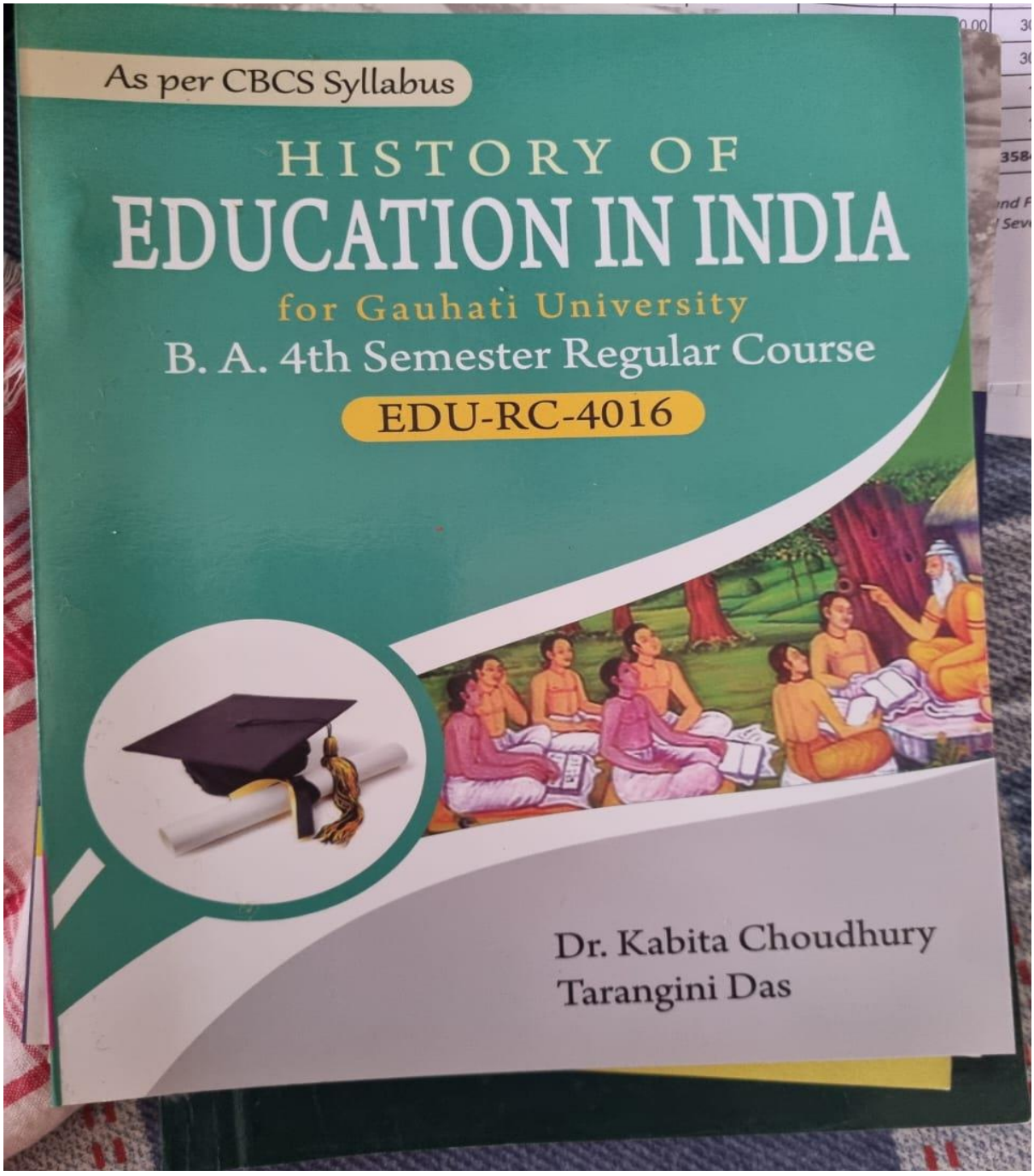

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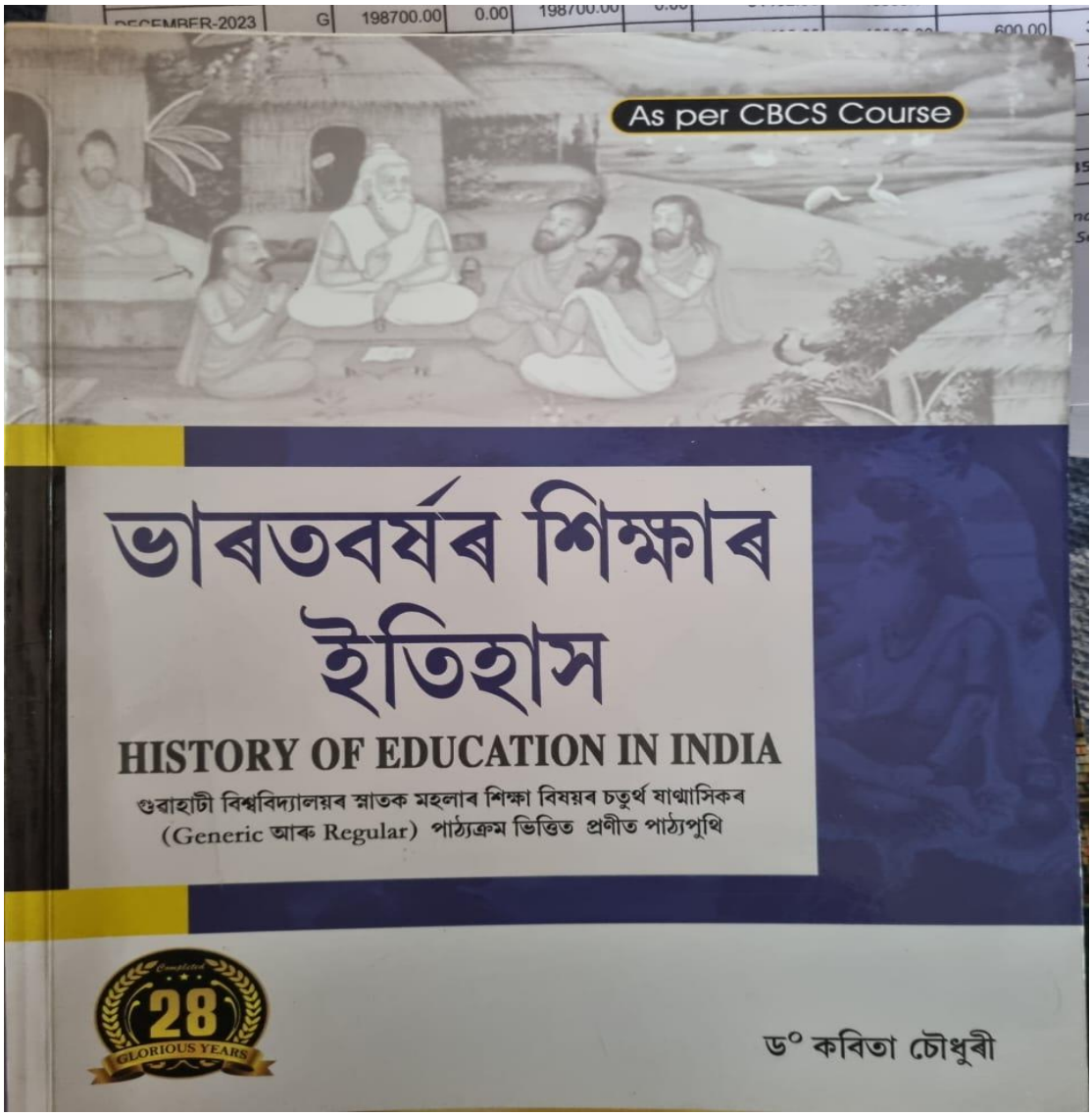

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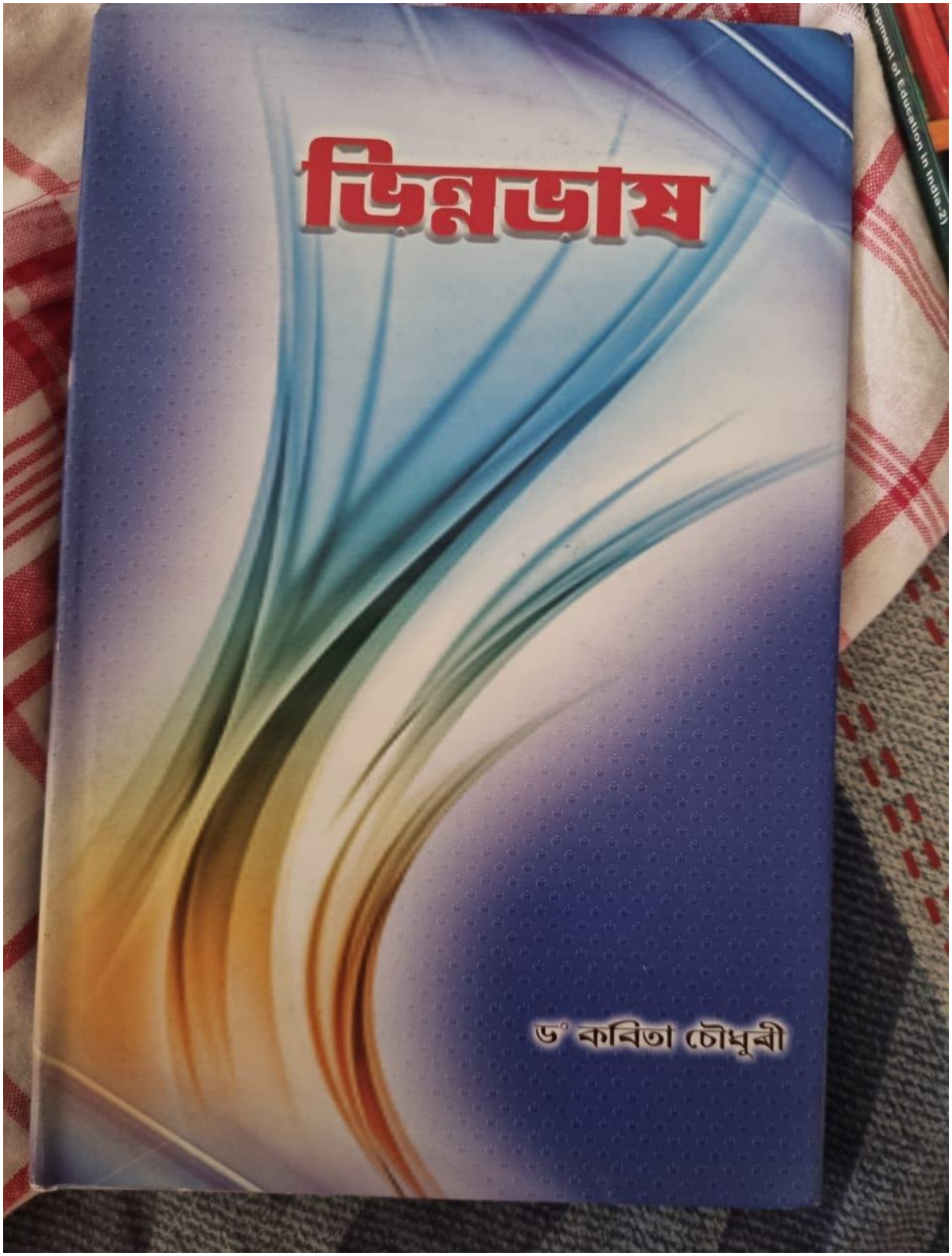

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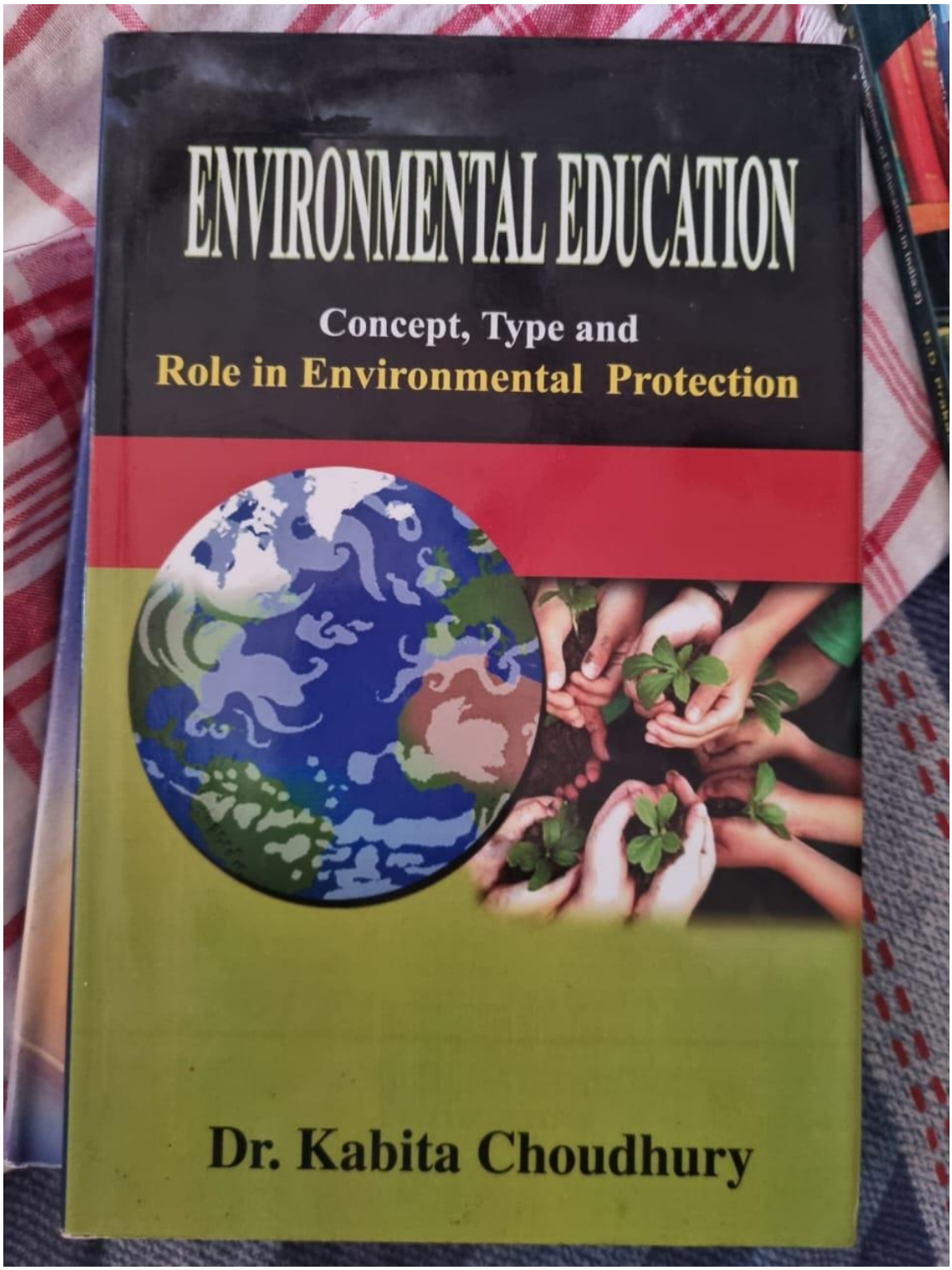

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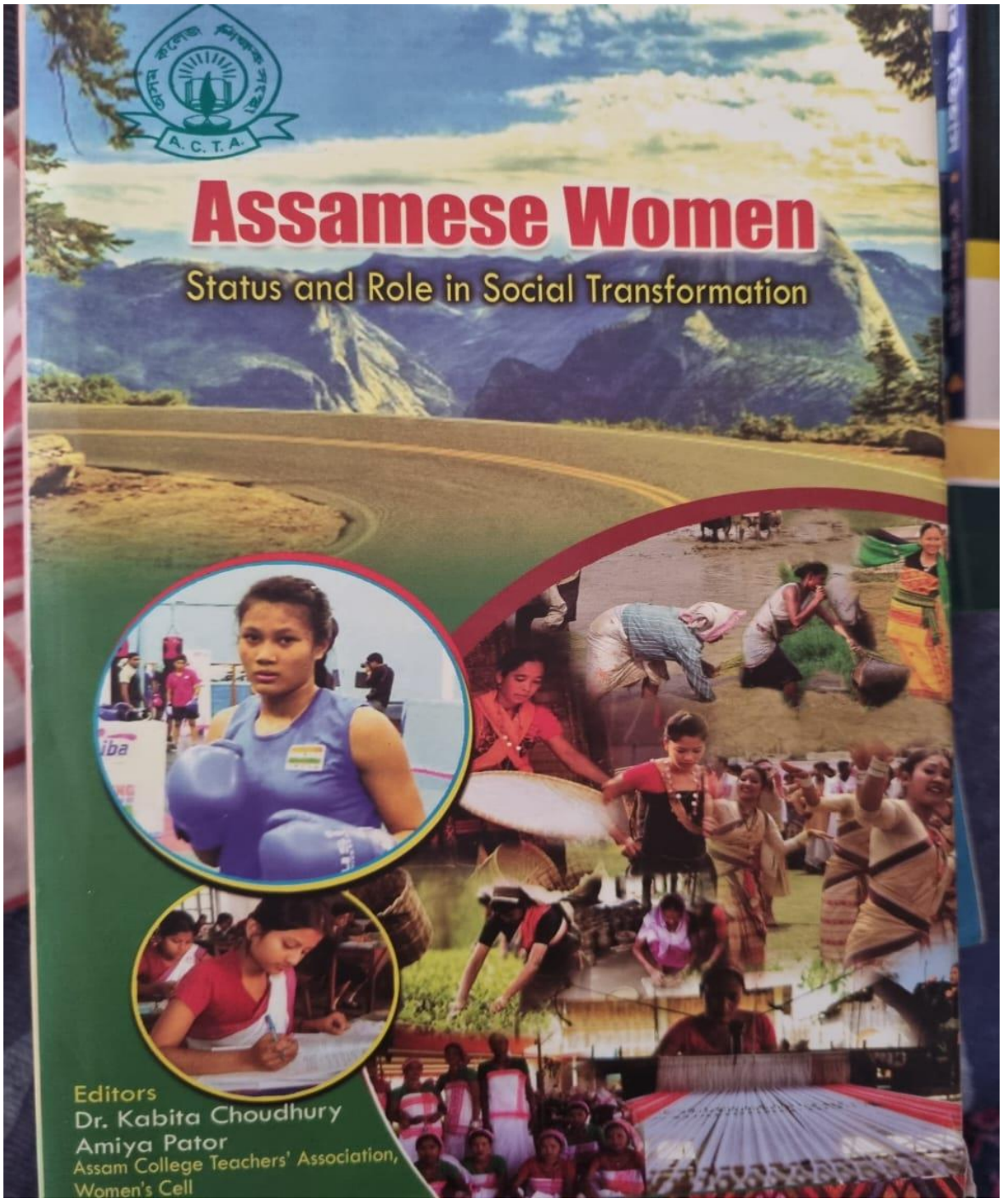

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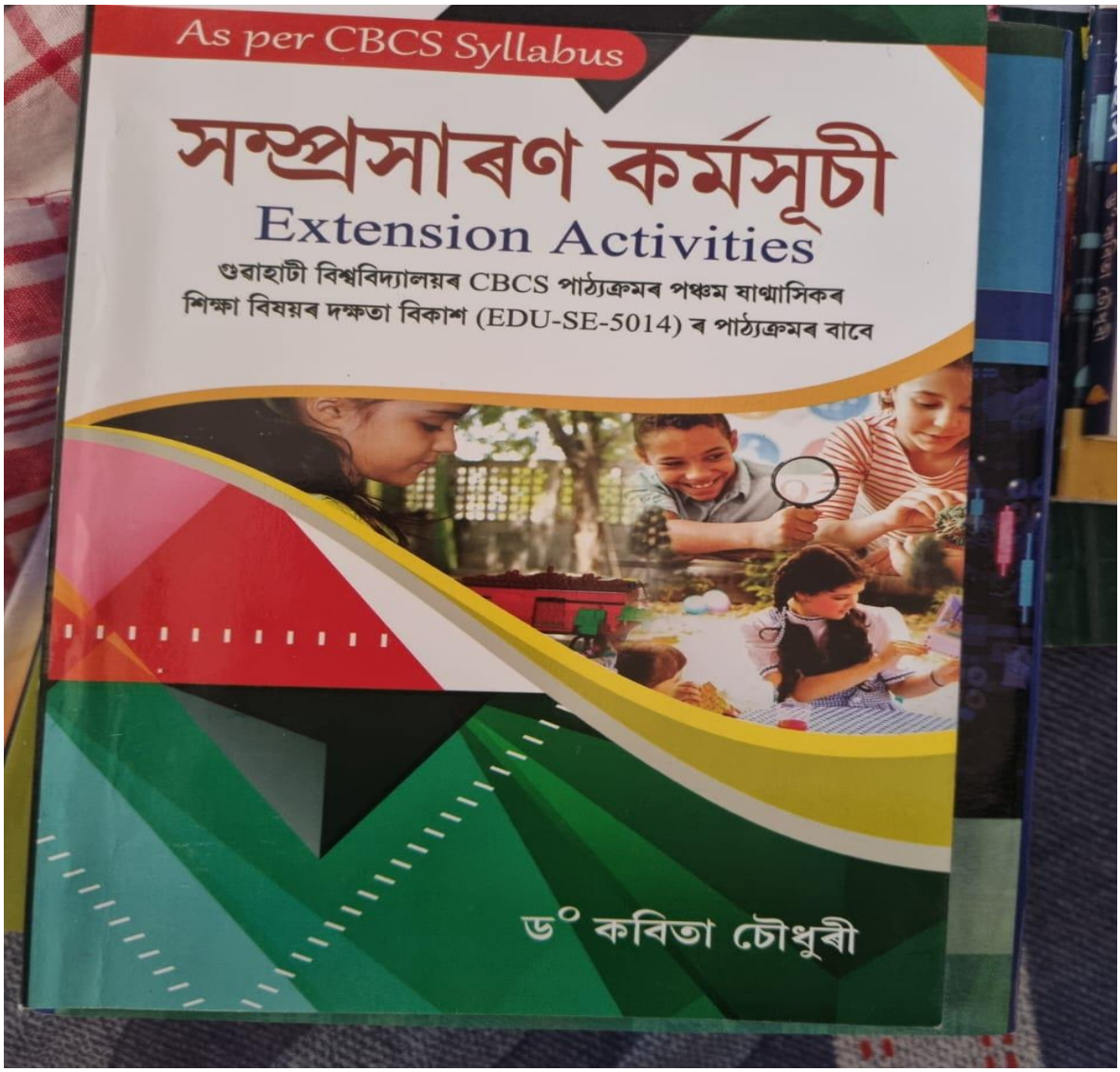

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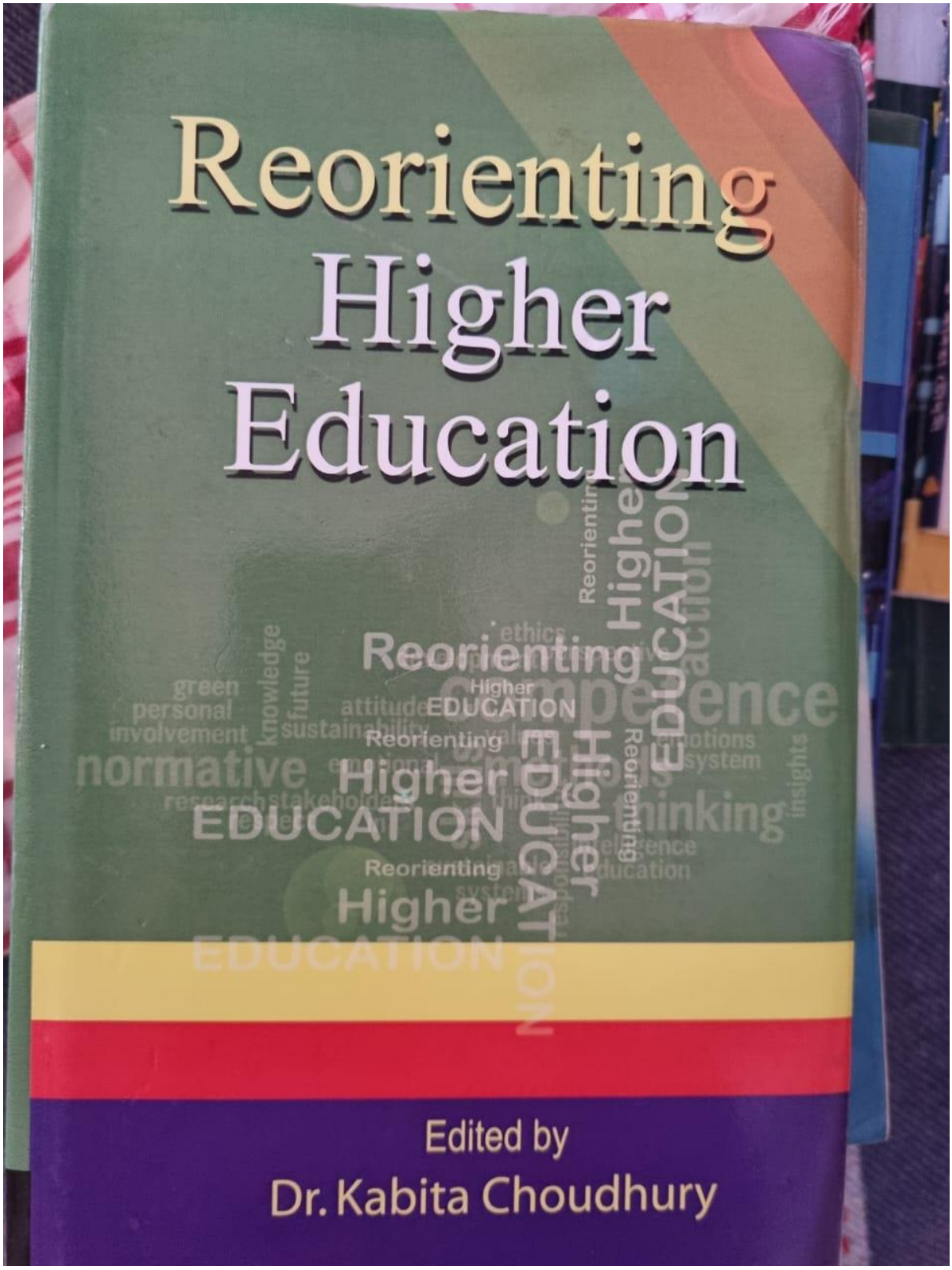

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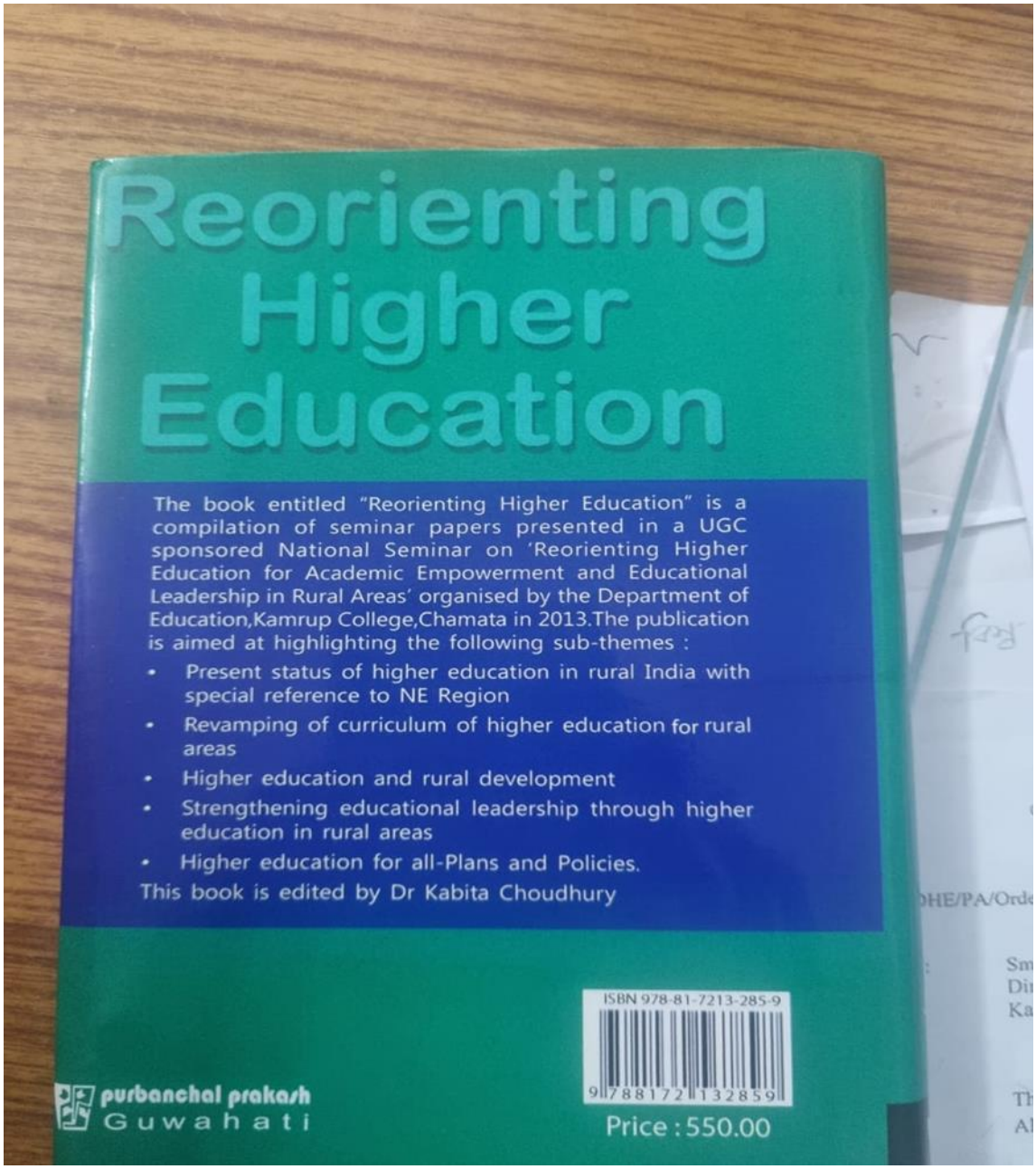

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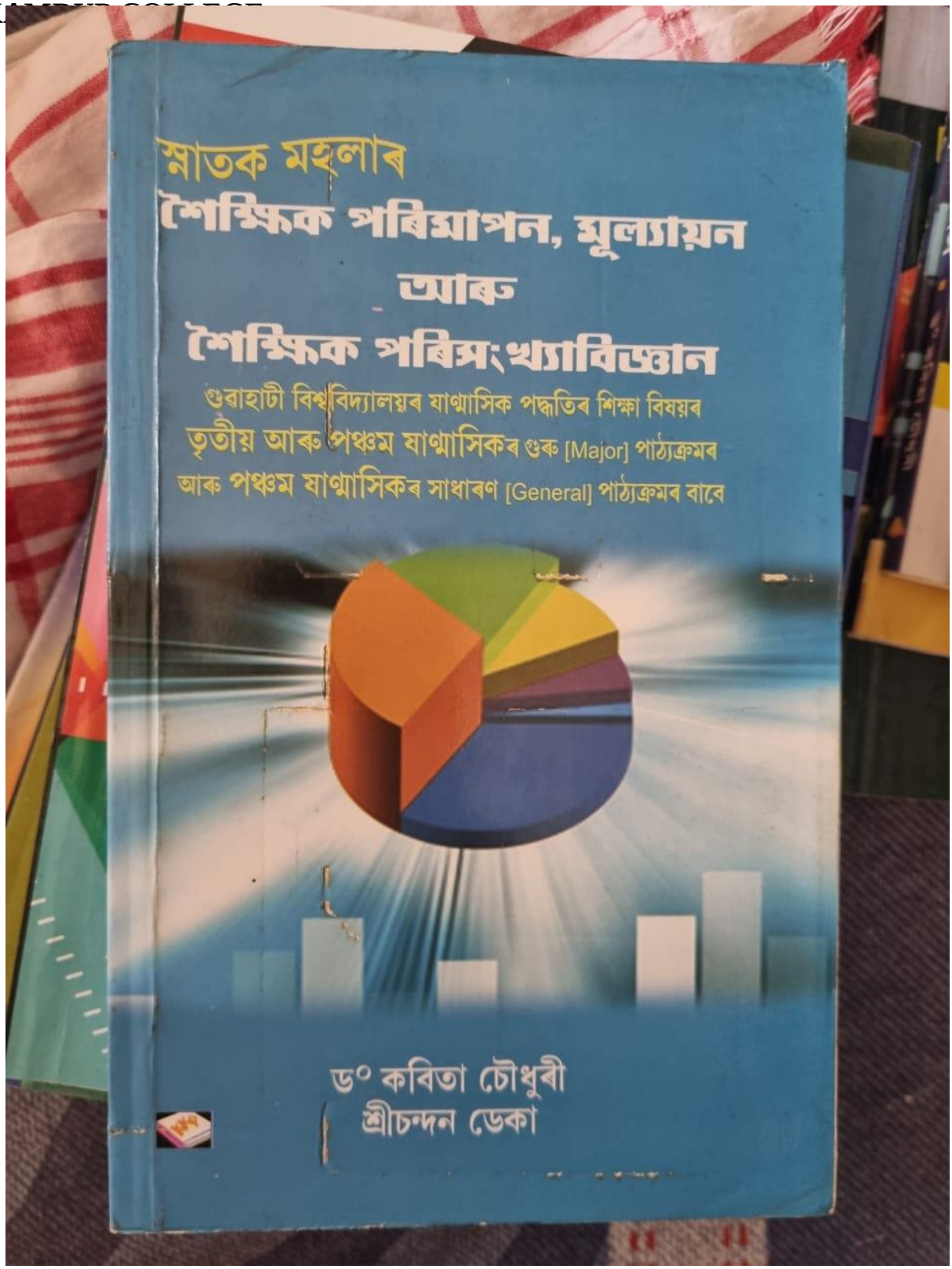

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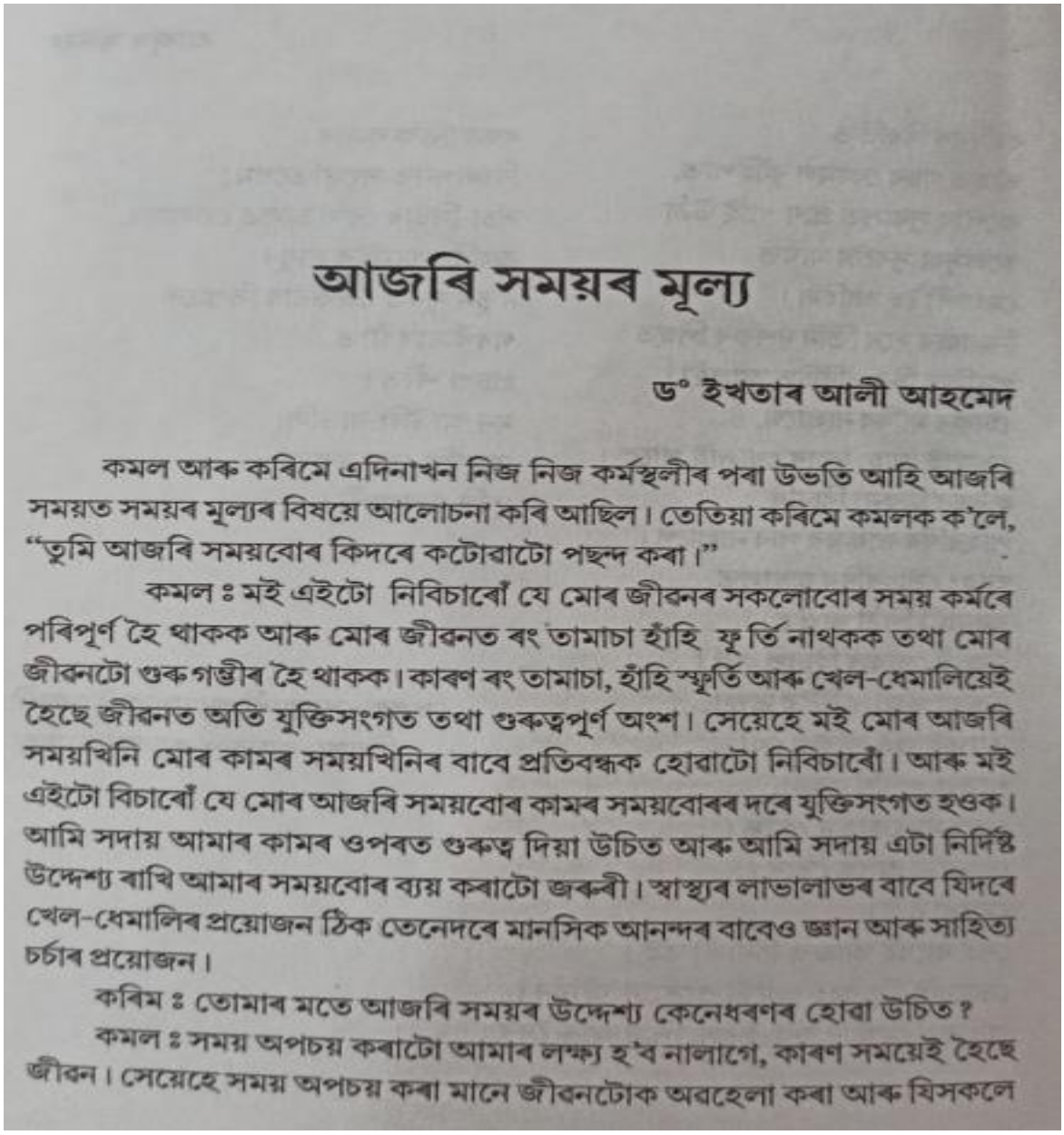

আজৰি সময়ৰ মূল্য

ড° ইখতাৰ আলী আহমেদ

কমল আৰু কৰিমে এদিনাখন নিজ নিজ কৰ্মস্থলীৰ পৰা উভতি আহি আজৰি সময়ত সময়ৰ মূল্যৰ বিষয়ে আলোচনা কৰি আছিল। তেতিয়া কৰিমে কমলক ক'লে, "তুমি আজৰি সময়বোৰ কিদৰে কটোৱাটো পছন্দ কৰা।"

কমল ঃ মই এইটো নিবিচাৰোঁ যে মোৰ জীৱনৰ সকলোবোৰ সময় কৰ্মৰে পৰিপূৰ্ণ হৈ থাকক আৰু মোৰ জীৱনত ৰং তামাচা হাঁহি ফূৰ্তি নাথকক তথা মোৰ জীৱনটো গুৰুগম্ভীৰ হৈ থাকক। কাৰণ ৰং তামাচা, হাঁহি স্ফূৰ্তি আৰু খেল-ধেমালিয়েই হৈছে জীৱনত অতি যুক্তিসংগত তথা গুৰুত্বপূৰ্ণ অংশ। সেয়েহে মই মোৰ আজৰি সময়খিনি মোৰ কামৰ সময়খিনিৰ বাবে প্ৰতিবন্ধক হোৱাটো নিবিচাৰোঁ। আৰু মই এইটো বিচাৰোঁ যে মোৰ আজৰি সময়বোৰ কামৰ সময়বোৰৰ দৰে যুক্তিসংগত হওক। আমি সদায় আমাৰ কামৰ ওপৰত গুৰুত্ব দিয়া উচিত আৰু আমি সদায় এটা নিৰ্দিষ্ট উদ্দেশ্য ৰাখি আমাৰ সময়বোৰ ব্যয় কৰাটো জৰুৰী। স্বাস্থ্যৰ লাভালাভৰ বাবে যিদৰে খেল-ধেমালিৰ প্ৰয়োজন ঠিক তেনেদৰে মানসিক আনন্দৰ বাবেও জ্ঞান আৰু সাহিত্য চৰ্চাৰ প্ৰয়োজন।

কৰিম ঃ তোমাৰ মতে আজৰি সময়ৰ উদ্দেশ্য কেনেধৰণৰ হোৱা উচিত?

কমল ঃ সময় অপচয় কৰাটো আমাৰ লক্ষ্য হ'ব নালাগে, কাৰণ সময়েই হৈছে জীৱন। সেয়েহে সময় অপচয় কৰা মানে জীৱনটোক অৱহেলা কৰা আৰু যিসকলে

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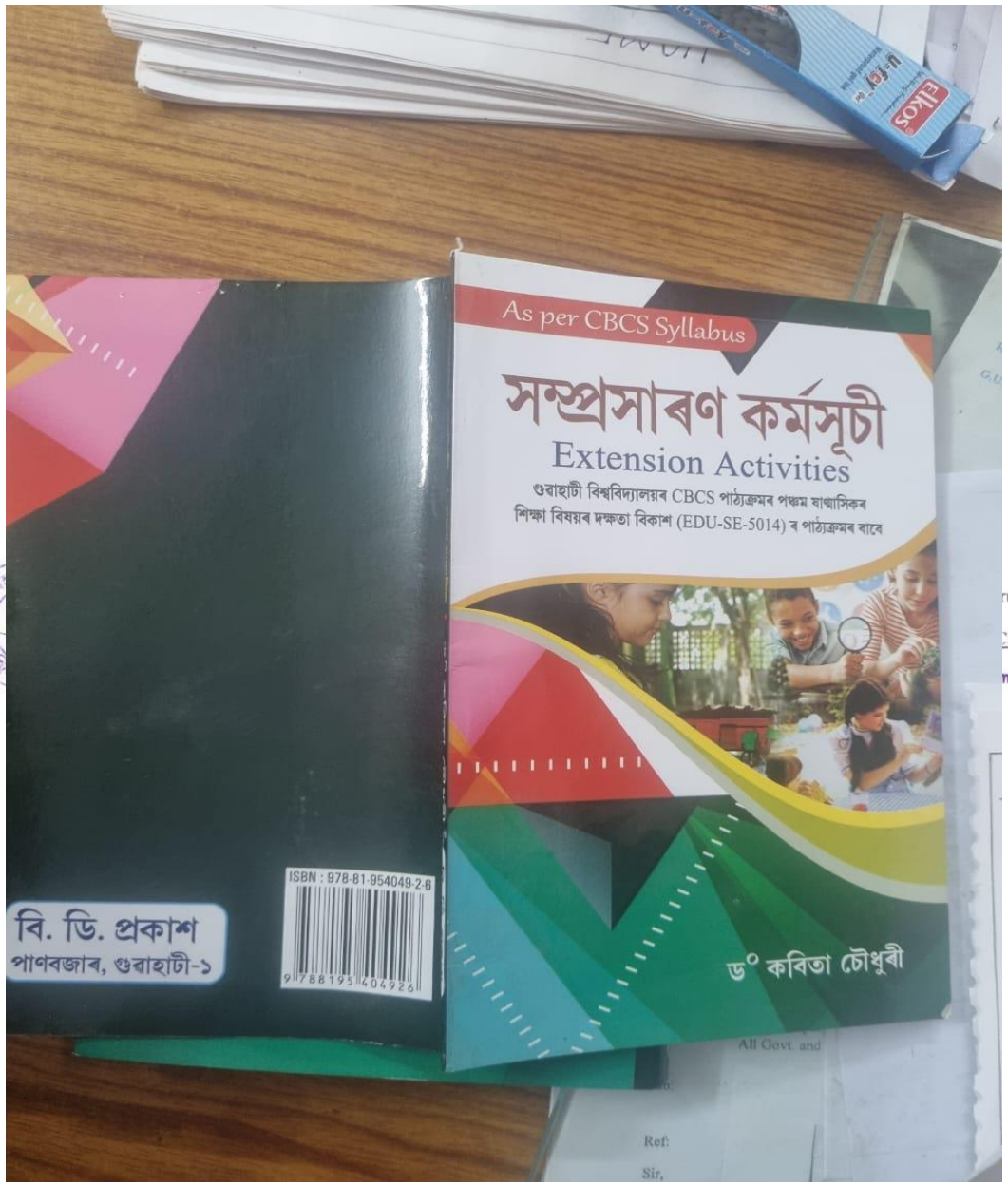

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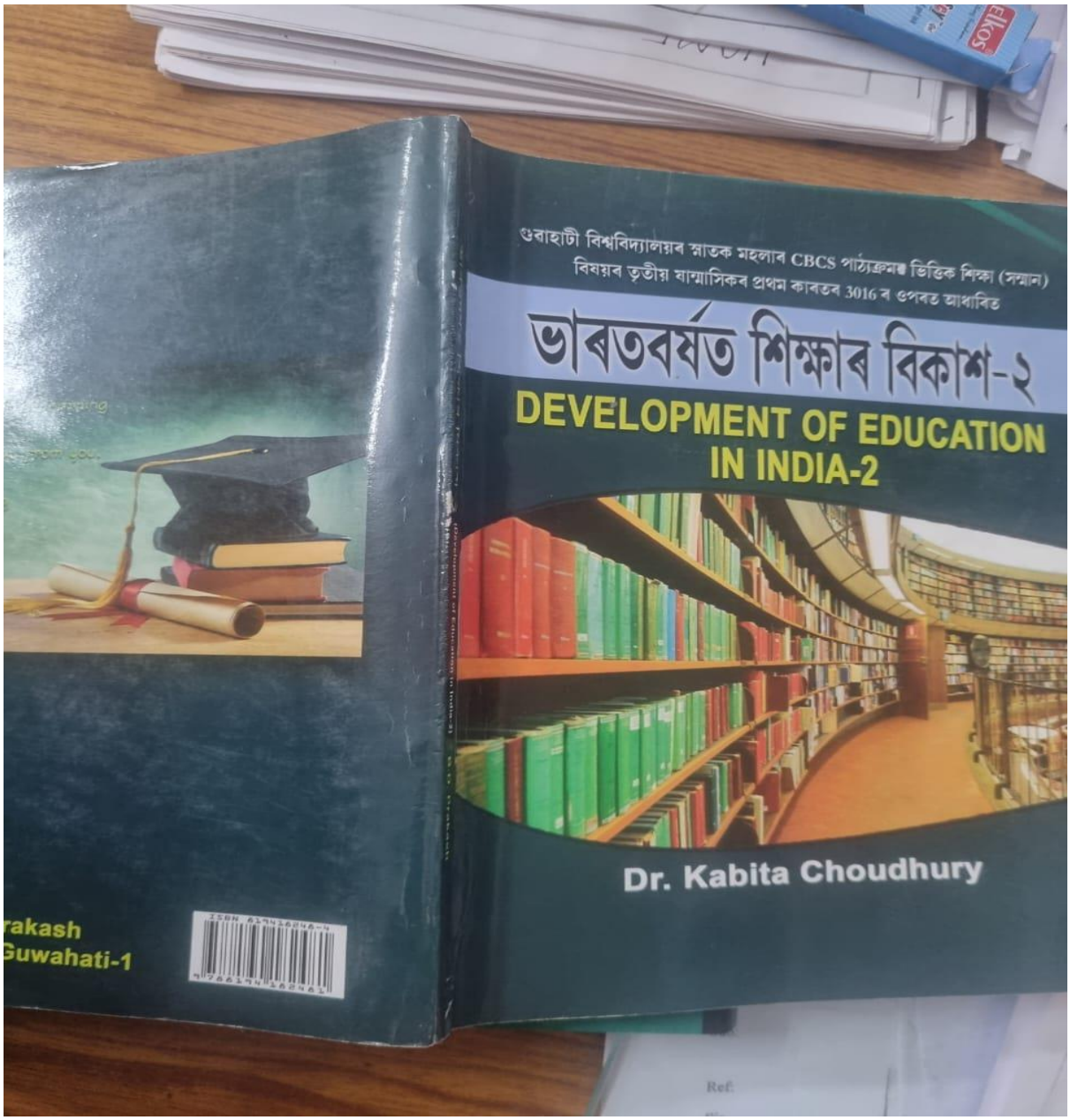

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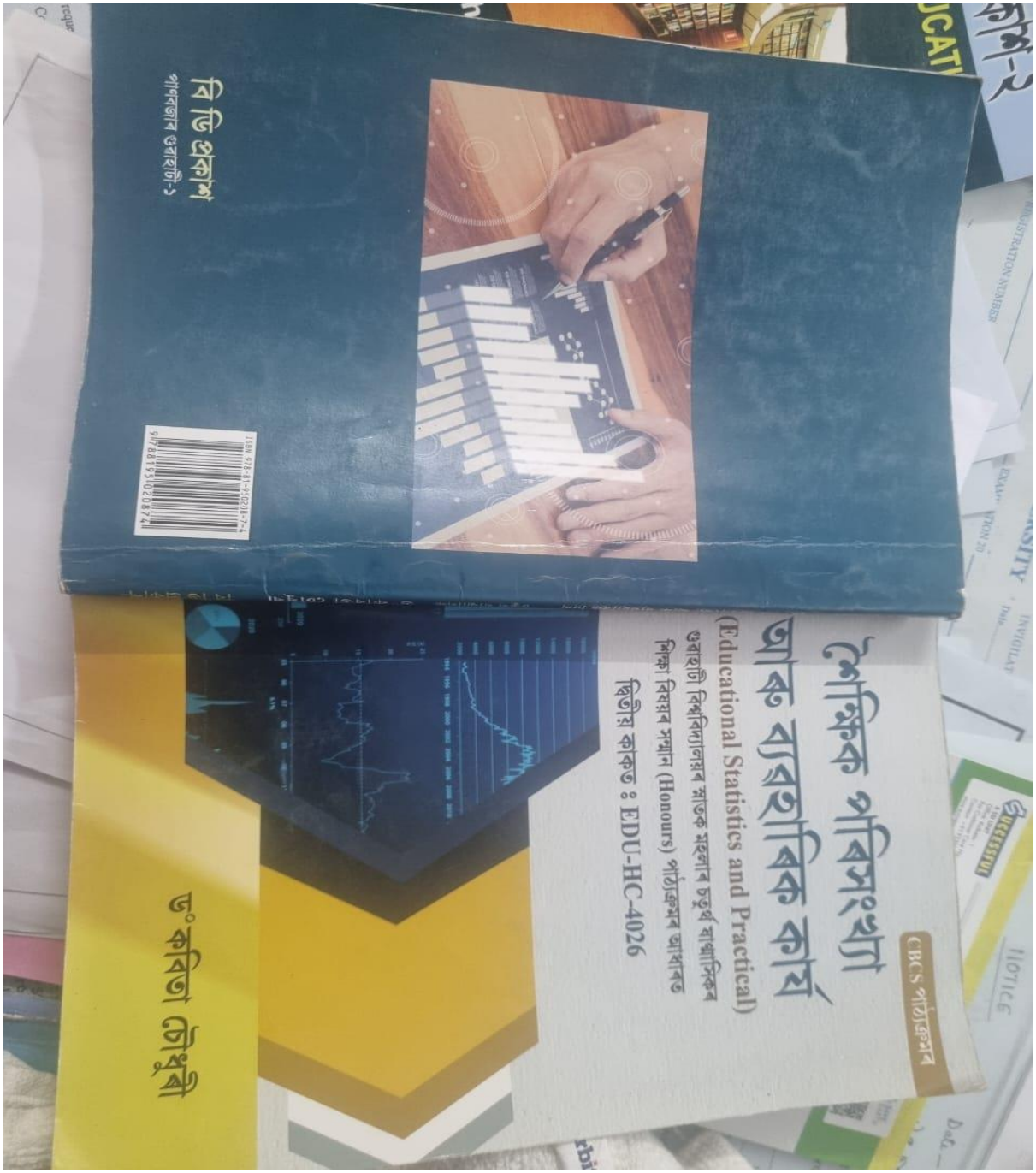

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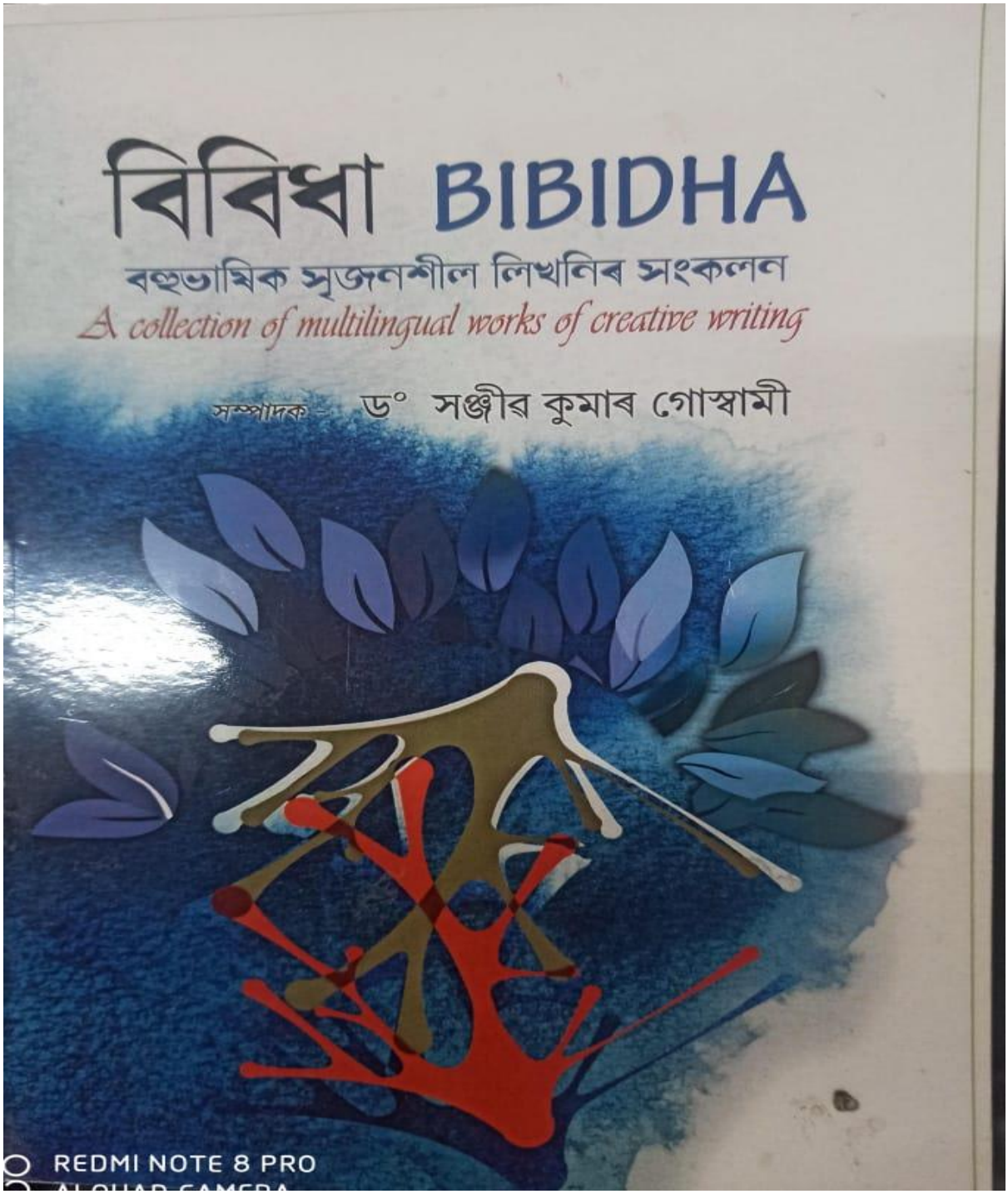

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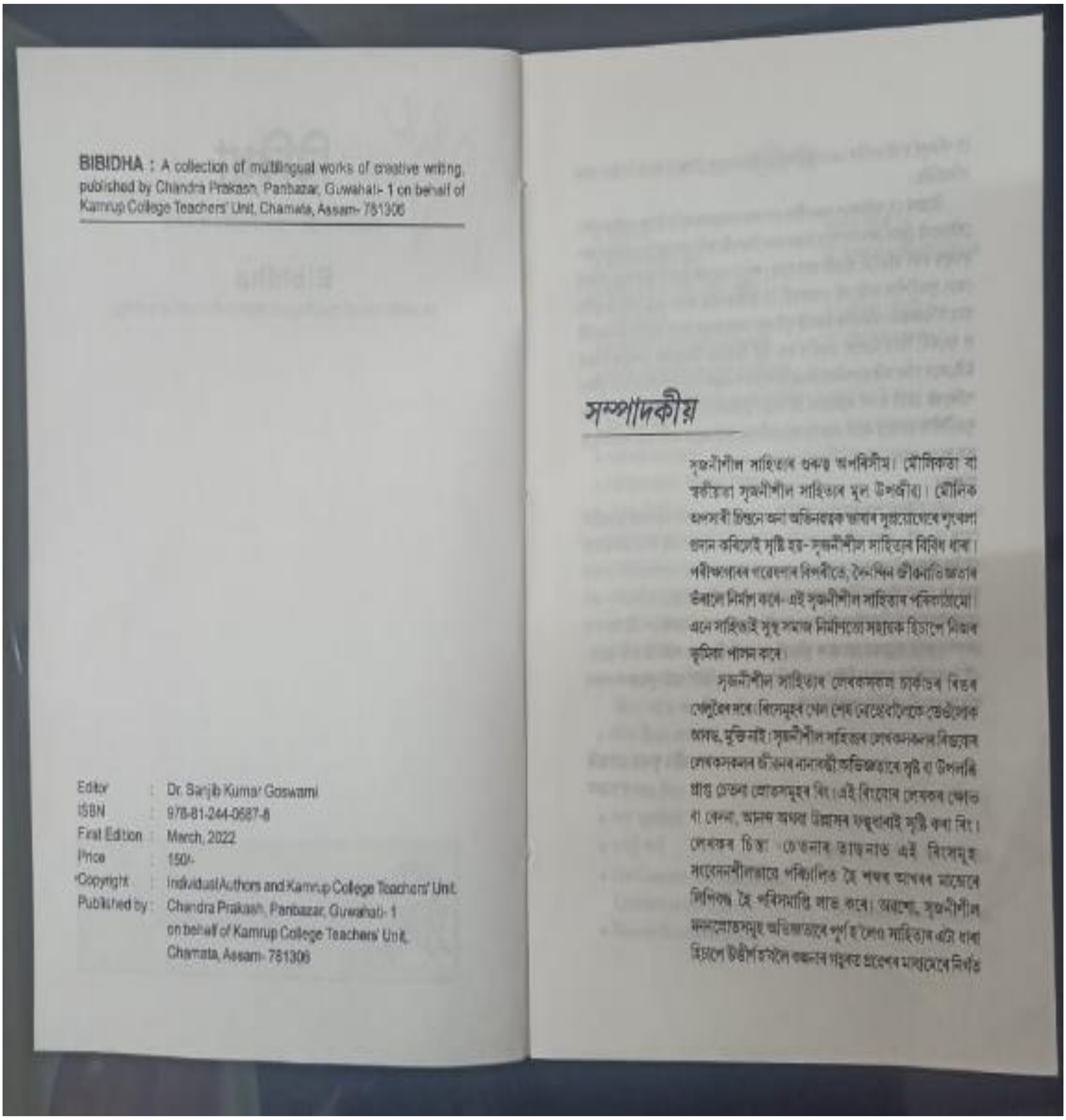

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সম্পাদকীয়

সৃজনীশীল সাহিত্যৰ গুৰুত্ব অনস্বীকাৰ্য। মৌলিকতা বা স্বকীয়তা সৃজনীশীল সাহিত্যৰ মূল উপজীব্য। মৌলিক কল্পনাৰী চিন্তনে অনা অভিনৱত্বক ভাষাৰ সুপ্রয়োগেৰে শৃংখলা প্রদান কৰিলেহে সৃষ্টি হয়- সৃজনীশীল সাহিত্যৰ বিবিধ ধাৰা। পৰীক্ষাগাৰৰ গৱেষণাৰ বিপৰীতে, দৈনন্দিন জীৱনৰ অভিজ্ঞতাৰ উৎসত নিৰ্মাণ কৰে- এই সৃজনীশীল সাহিত্যৰ পৰিকাঠামো। এনে সাহিত্যই সুস্থ সমাজ নিৰ্মাণতো সহায়ক হিচাপে বিশেষ ভূমিকা পালন কৰে।

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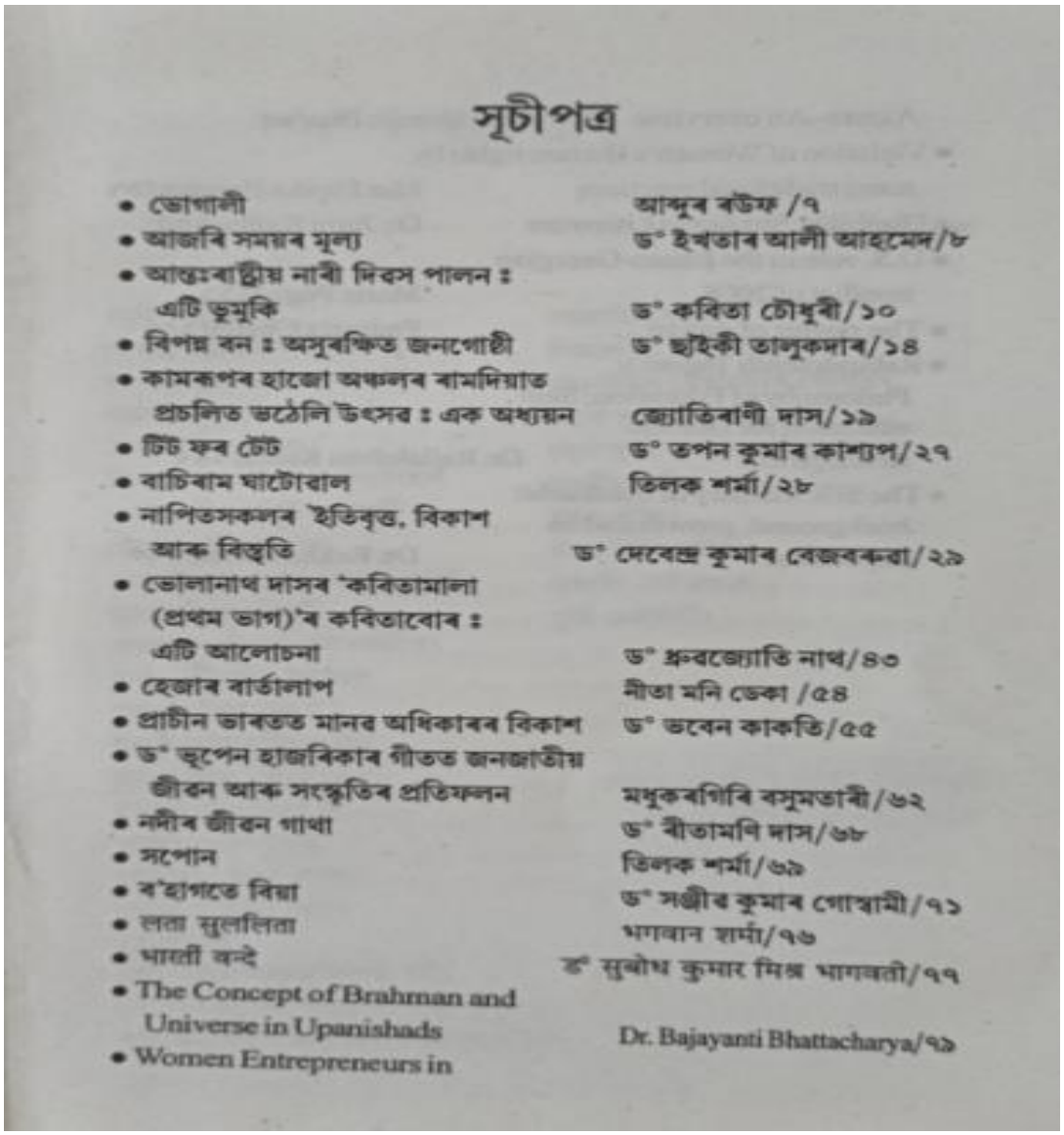

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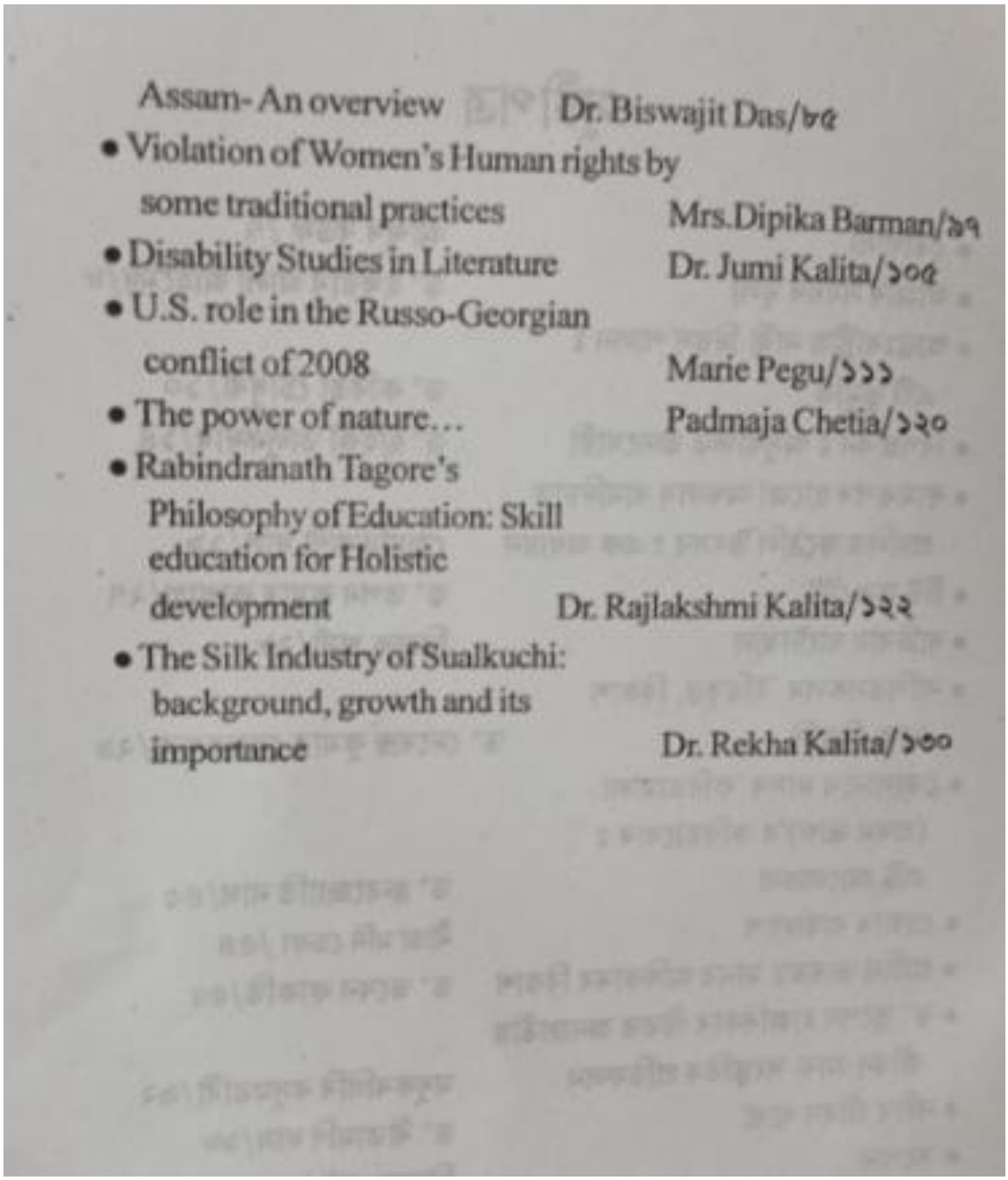

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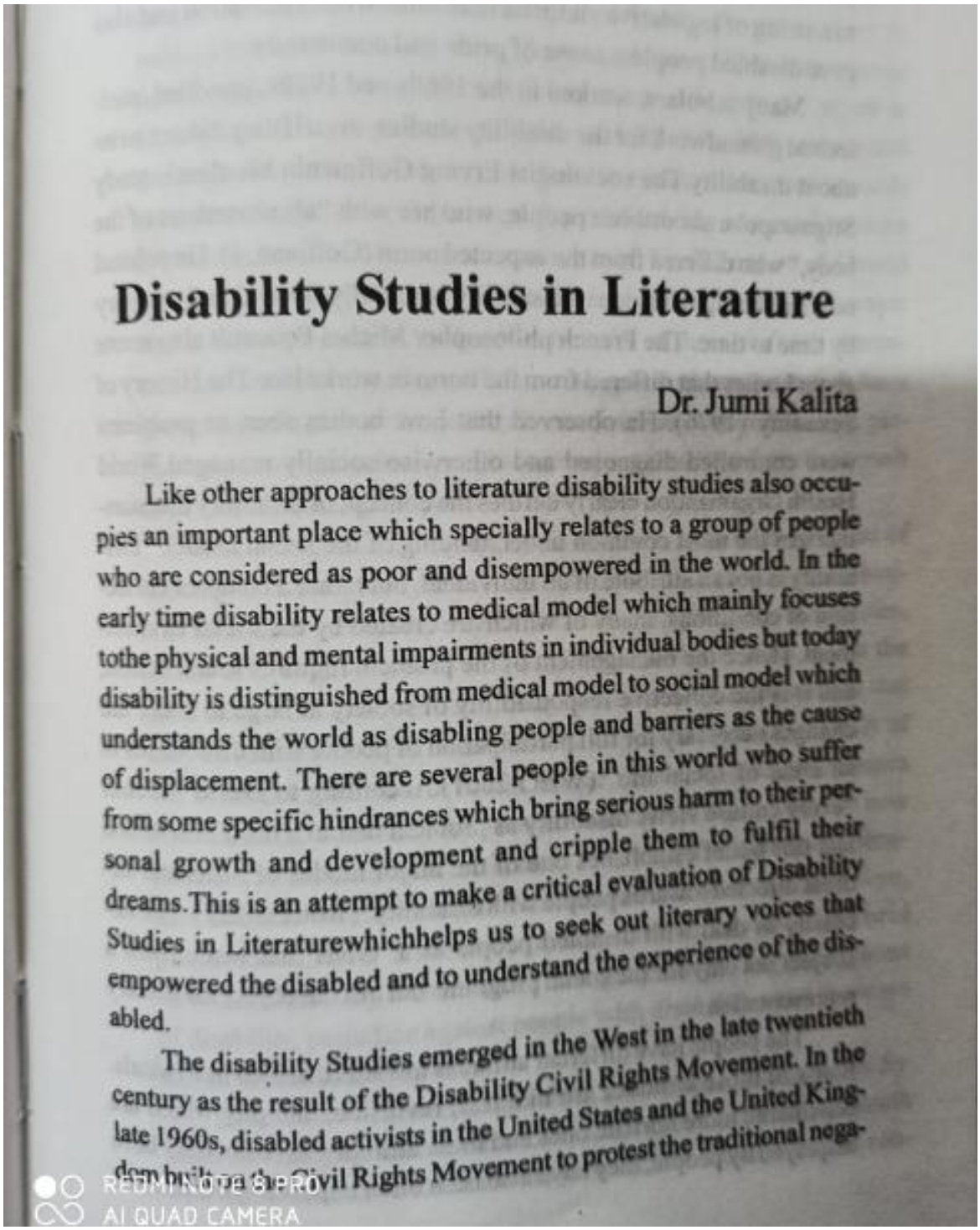

Disability Studies in Literature

Dr. Jumi Kalita

Like other approaches to literature disability studies also occupies an important place which specially relates to a group of people who are considered as poor and disempowered in the world. In the early time disability relates to medical model which mainly focuses tothe physical and mental impairments in individual bodies but today disability is distinguished from medical model to social model which understands the world as disabling people and barriers as the cause of displacement. There are several people in this world who suffer from some specific hindrances which bring serious harm to their personal growth and development and cripple them to fulfil their dreams.This is an attempt to make a critical evaluation of Disability Studies in Literaturewhichhelps us to seek out literary voices that empowered the disabled and to understand the experience of the disabled.

The disability Studies emerged in the West in the late twentieth century as the result of the Disability Civil Rights Movement. In the late 1960s, disabled activists in the United States and the United Kingdom built on the Civil Rights Movement to protest the traditional nega-

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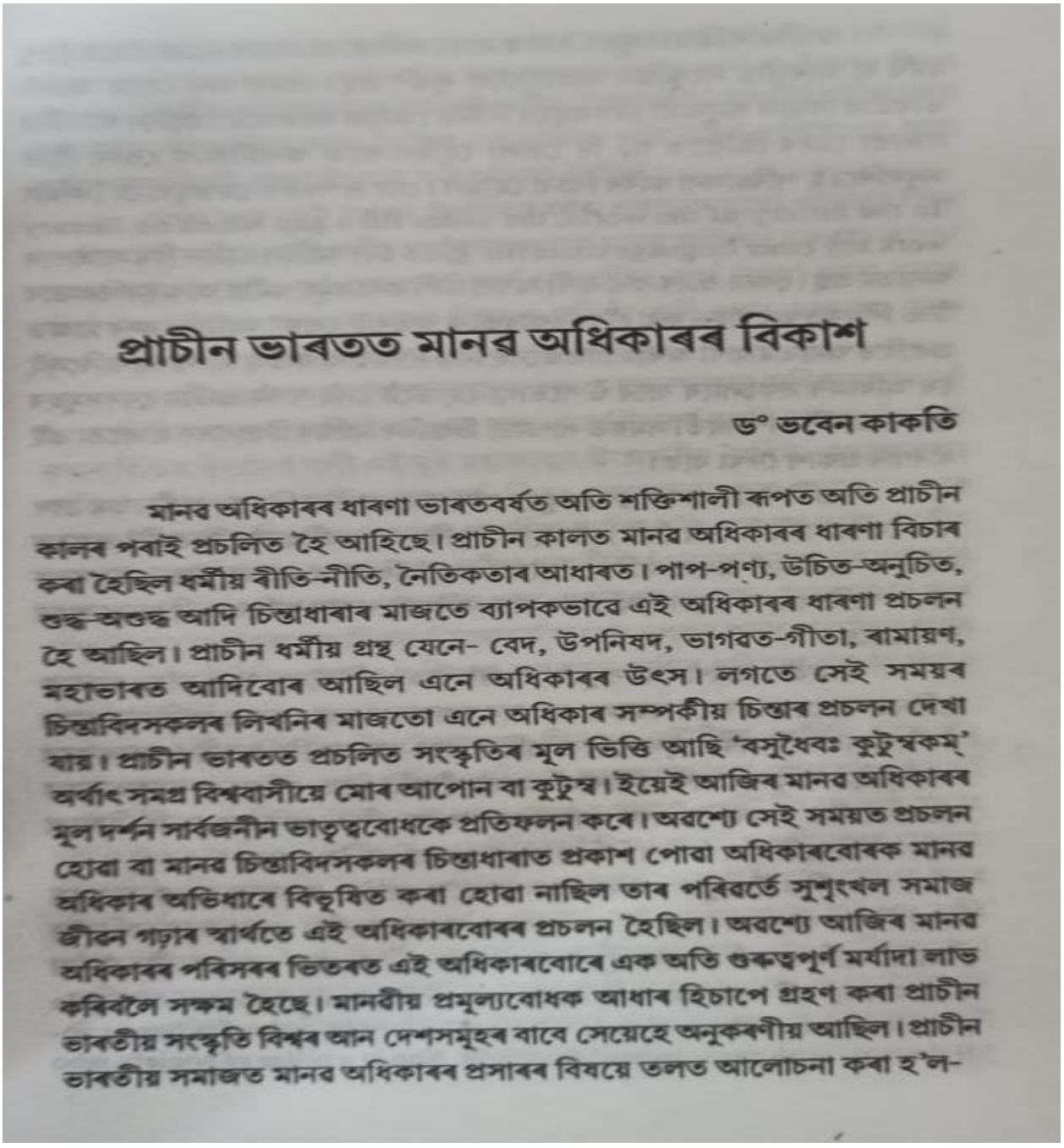

প্ৰাচীন ভাৰতত মানৰ অধিকাৰৰ বিকাশ

ড° ভবেন কাকতি

মানৱ অধিকাৰৰ ধাৰণা ভাৰতবৰ্ষত অতি শক্তিশালী ৰূপত অতি প্ৰাচীন কালৰ পৰাই প্ৰচলিত হৈ আহিছে। প্ৰাচীন কালত মানৱ অধিকাৰৰ ধাৰণা বিচাৰ কৰা হৈছিল ধৰ্মীয় ৰীতি-নীতি, নৈতিকতাৰ আধাৰত। পাপ-পণ্য, উচিত-অনুচিত, শুদ্ধ-অশুদ্ধ আদি চিন্তাধাৰাৰ মাজতে ব্যাপকভাবে এই অধিকাৰৰ ধাৰণা প্ৰচলন হৈ আছিল। প্ৰাচীন ধৰ্মীয় গ্ৰন্থ যেনে- বেদ, উপনিষদ, ভাগৱত-গীতা, ৰামায়ণ, মহাভাৰত আদিবোৰ আছিল এনে অধিকাৰৰ উৎস। লগতে সেই সময়ৰ চিন্তাবিদসকলৰ লিখনিৰ মাজতো এনে অধিকাৰ সম্পৰ্কীয় চিন্তাৰ প্ৰচলন দেখা যায়। প্ৰাচীন ভাৰতত প্ৰচলিত সংস্কৃতিৰ মূল ভিত্তি আছি 'বসুধৈবঃ কুটুম্বকম্' অৰ্থাৎ সমগ্ৰ বিশ্ববাসীয়ে মোৰ আপোন বা কুটুম্ব। ইয়েই আজিৰ মানৱ অধিকাৰৰ মূল দৰ্শন সাৰ্বজনীন ভাতৃত্ববোধকে প্ৰতিফলন কৰে। অৱশ্যে সেই সময়ত প্ৰচলন হোৱা বা মানৱ চিন্তাবিদসকলৰ চিন্তাধাৰাত প্ৰকাশ পোৱা অধিকাৰবোৰক মানৱ অধিকাৰ অভিধাৰে বিভূষিত কৰা হোৱা নাছিল তাৰ পৰিৱৰ্তে সুশৃংখল সমাজ জীৱন গঢ়াৰ স্বাৰ্থতে এই অধিকাৰবোৰৰ প্ৰচলন হৈছিল। অৱশ্যে আজিৰ মানৱ অধিকাৰৰ পৰিসৰৰ ভিতৰত এই অধিকাৰবোৰে এক অতি গুৰুত্বপূৰ্ণ মৰ্যাদা লাভ কৰিবলৈ সক্ষম হৈছে। মানবীয় প্ৰমূল্যবোধক আধাৰ হিচাপে গ্ৰহণ কৰা প্ৰাচীন ভাৰতীয় সংস্কৃতি বিশ্বৰ আন দেশসমূহৰ বাবে সেয়েহে অনুকৰণীয় আছিল। প্ৰাচীন ভাৰতীয় সমাজত মানৱ অধিকাৰৰ প্ৰসাৰৰ বিষয়ে তলত আলোচনা কৰা হ'ল-

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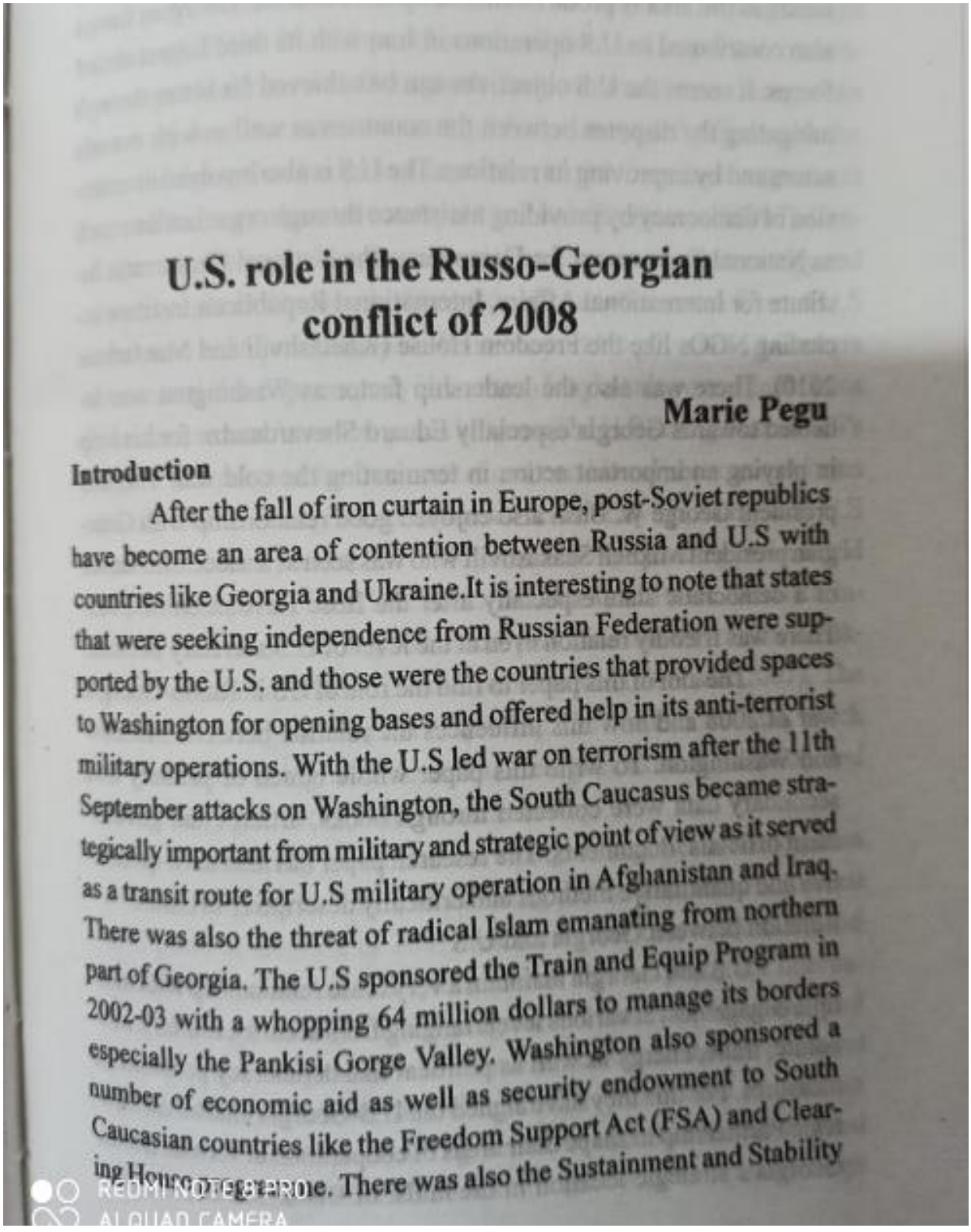

U.S. role in the Russo-Georgian conflict of 2008

Marie Pegu

Introduction

After the fall of iron curtain in Europe, post-Soviet republics have become an area of contention between Russia and U.S with countries like Georgia and Ukraine.It is interesting to note that states that were seeking independence from Russian Federation were supported by the U.S. and those were the countries that provided spaces to Washington for opening bases and offered help in its anti-terrorist military operations. With the U.S led war on terrorism after the 11th September attacks on Washington, the South Caucasus became strategically important from military and strategic point of view as it served as a transit route for U.S military operation in Afghanistan and Iraq. There was also the threat of radical Islam emanating from northern part of Georgia. The U.S sponsored the Train and Equip Program in 2002-03 with a whopping 64 million dollars to manage its borders especially the Pankisi Gorge Valley. Washington also sponsored a number of economic aid as well as security endowment to South Caucasian countries like the Freedom Support Act (FSA) and Clearing House Regime. There was also the Sustainment and Stability

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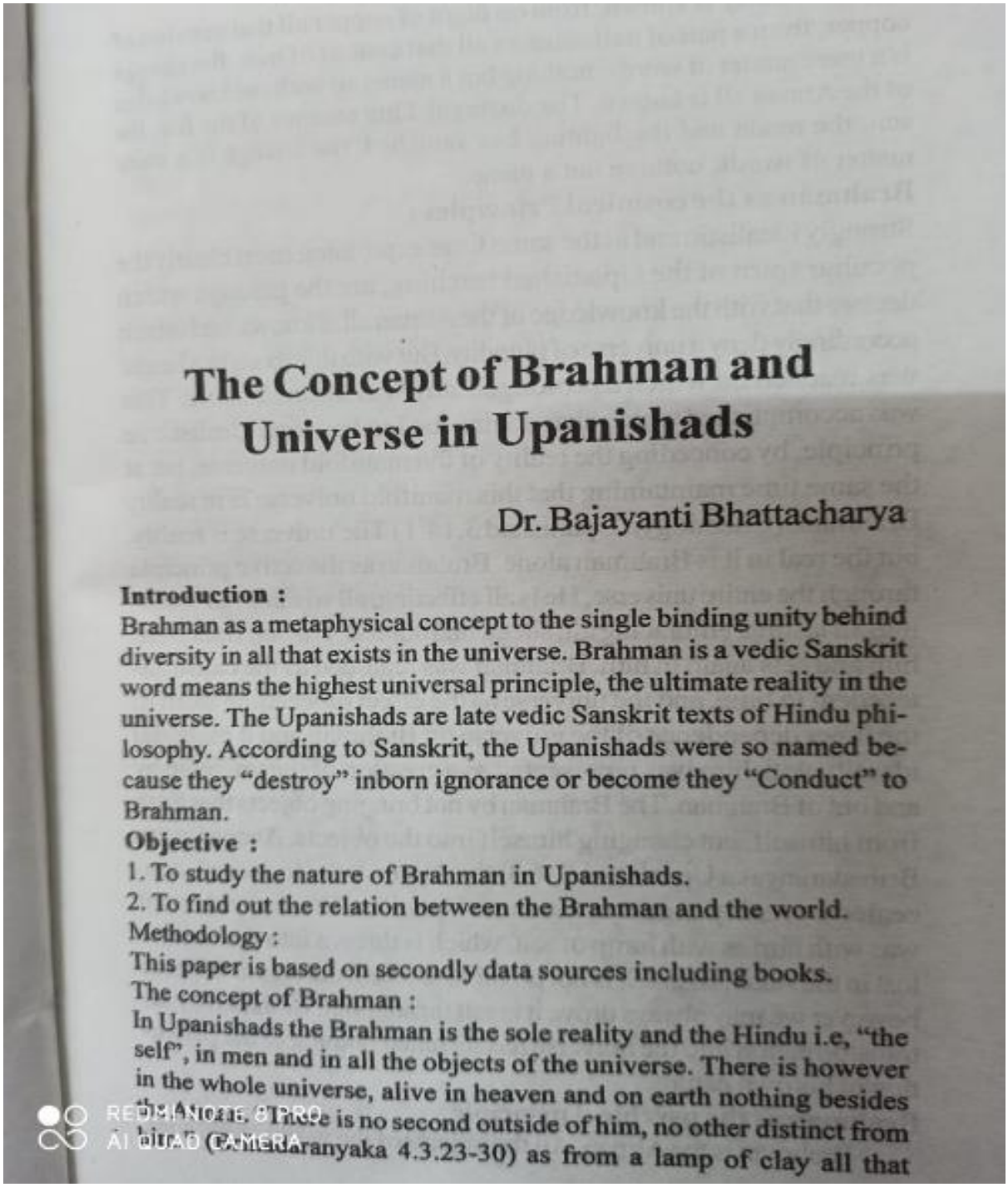

The Concept of Brahman and Universe in Upanishads

Dr. Bajayanti Bhattacharya

Introduction :

Brahman as a metaphysical concept to the single binding unity behind diversity in all that exists in the universe. Brahman is a vedic Sanskrit word means the highest universal principle, the ultimate reality in the universe. The Upanishads are late vedic Sanskrit texts of Hindu philosophy. According to Sanskrit, the Upanishads were so named because they "destroy" inborn ignorance or become they "Conduct" to Brahman.

Objective :

1. To study the nature of Brahman in Upanishads.
2. To find out the relation between the Brahman and the world.

Methodology :

This paper is based on secondly data sources including books.

The concept of Brahman :

In Upanishads the Brahman is the sole reality and the Hindu i.e, "the self", in men and in all the objects of the universe. There is however in the whole universe, alive in heaven and on earth nothing besides the Atman. There is no second outside of him, no other distinct from him (Brihadaranyaka 4.3.23-30) as from a lamp of clay all that

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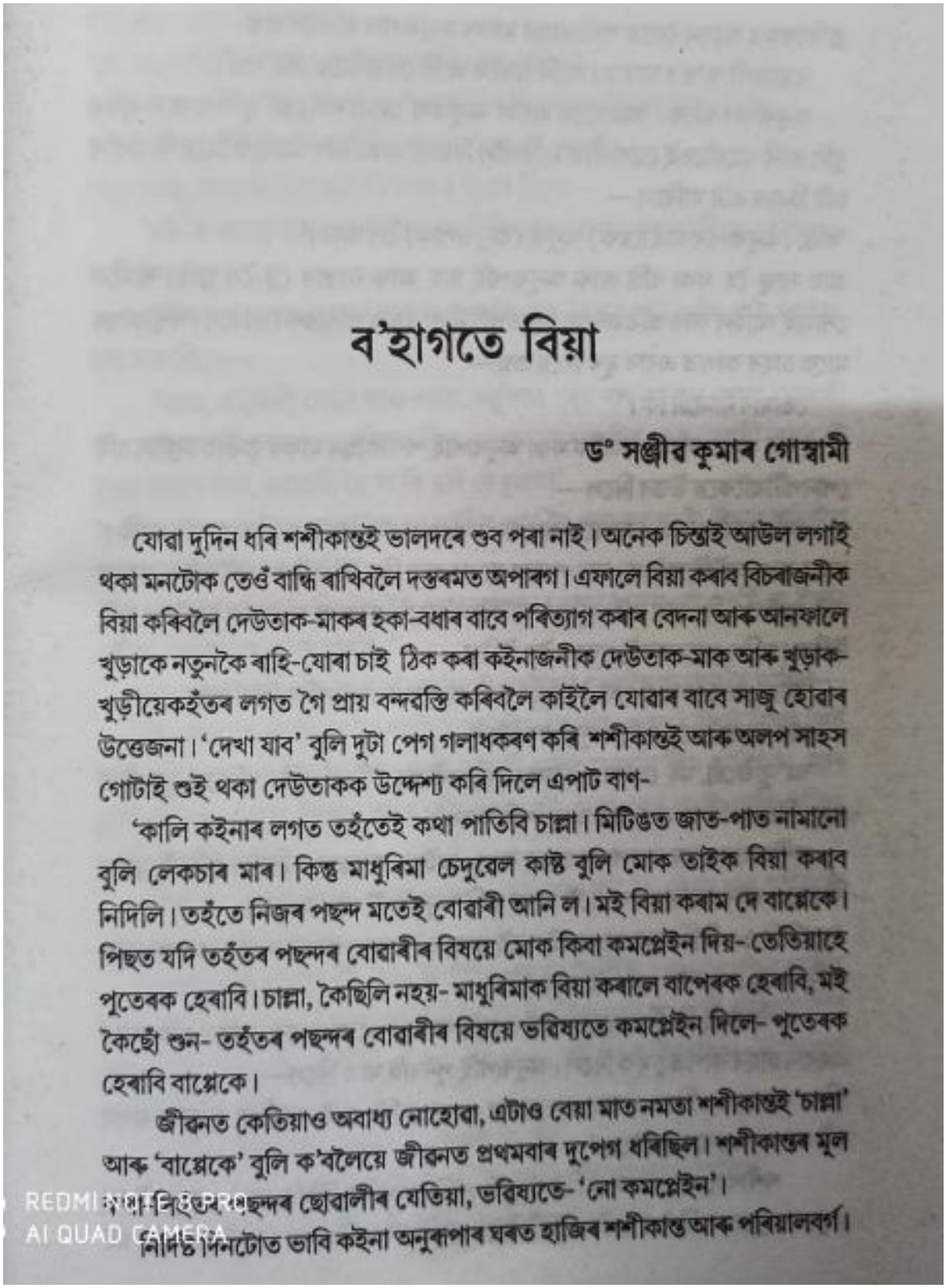

ব'হাগতে বিয়া

ড° সঞ্জীৱ কুমাৰ গোস্বামী

যোৱা দুদিন ধৰি শশীকান্তই ভালদৰে শুব পৰা নাই। অনেক চিন্তাই আউল লগাই থকা মনটোক তেওঁ বান্ধি ৰাখিবলৈ দস্তৰমত অপাৰগ। এফালে বিয়া কৰাৰ বিচাৰজনীক বিয়া কৰিবলৈ দেউতাক-মাকৰ হকা-বধাৰ বাবে পৰিত্যাগ কৰাৰ বেদনা আৰু আনফালে খুড়াকে নতুনকৈ ৰাহি-যোৱা চাই ঠিক কৰা কইনাজনীক দেউতাক-মাক আৰু খুড়াক-খুড়ীয়েকহঁতৰ লগত গৈ প্ৰায় বন্দৱস্তি কৰিবলৈ কাইলৈ যোৱাৰ বাবে সাজু হোৱাৰ উত্তেজনা। 'দেখা যাব' বুলি দুটা পেগ গলাধকৰণ কৰি শশীকান্তই আৰু অলপ সাহস গোটাই শুই থকা দেউতাকক উদ্দেশ্য কৰি দিলে এপাট বাণ-

'কালি কইনাৰ লগত তহঁতেই কথা পাতিবি চাল্লা। মিটিঙত জাত-পাত নামানো বুলি লেকচাৰ মাৰ। কিন্তু মাধুৰিমা চেদুৰেল কাষ্ট বুলি মোক তাইক বিয়া কৰাব নিদিলি। তহঁতে নিজৰ পছন্দ মতেই বোৱাৰী আনি ল। মই বিয়া কৰাম দে বাপ্পেকে। পিছত যদি তহঁতৰ পছন্দৰ বোৱাৰীৰ বিষয়ে মোক কিবা কমপ্লেইন দিয়- তেতিয়াহে পুতেৰক হেৰাবি। চাল্লা, কৈছিলি নহয়- মাধুৰিমাক বিয়া কৰালে বাপেৰক হেৰাবি, মই কৈছোঁ শুন- তহঁতৰ পছন্দৰ বোৱাৰীৰ বিষয়ে ভৱিষ্যতে কমপ্লেইন দিলে- পুতেৰক হেৰাবি বাপ্পেকে।

জীৱনত কেতিয়াও অবাধ্য নোহোৱা, এটাও বেয়া মাত নমতা শশীকান্তই 'চাল্লা' আৰু 'বাপ্পেকে' বুলি ক'বলৈয়ে জীৱনত প্ৰথমবাৰ দুপেগ ধৰিছিল। শশীকান্তৰ মুল [illegible] ছন্দৰ ছোৱালীৰ যেতিয়া, ভৱিষ্যতে- 'নো কমপ্লেইন'।

নিৰ্দিষ্ট দিনটোত ভাবি কইনা অনুৰূপাৰ ঘৰত হাজিৰ শশীকান্ত আৰু পৰিয়ালবৰ্গ।

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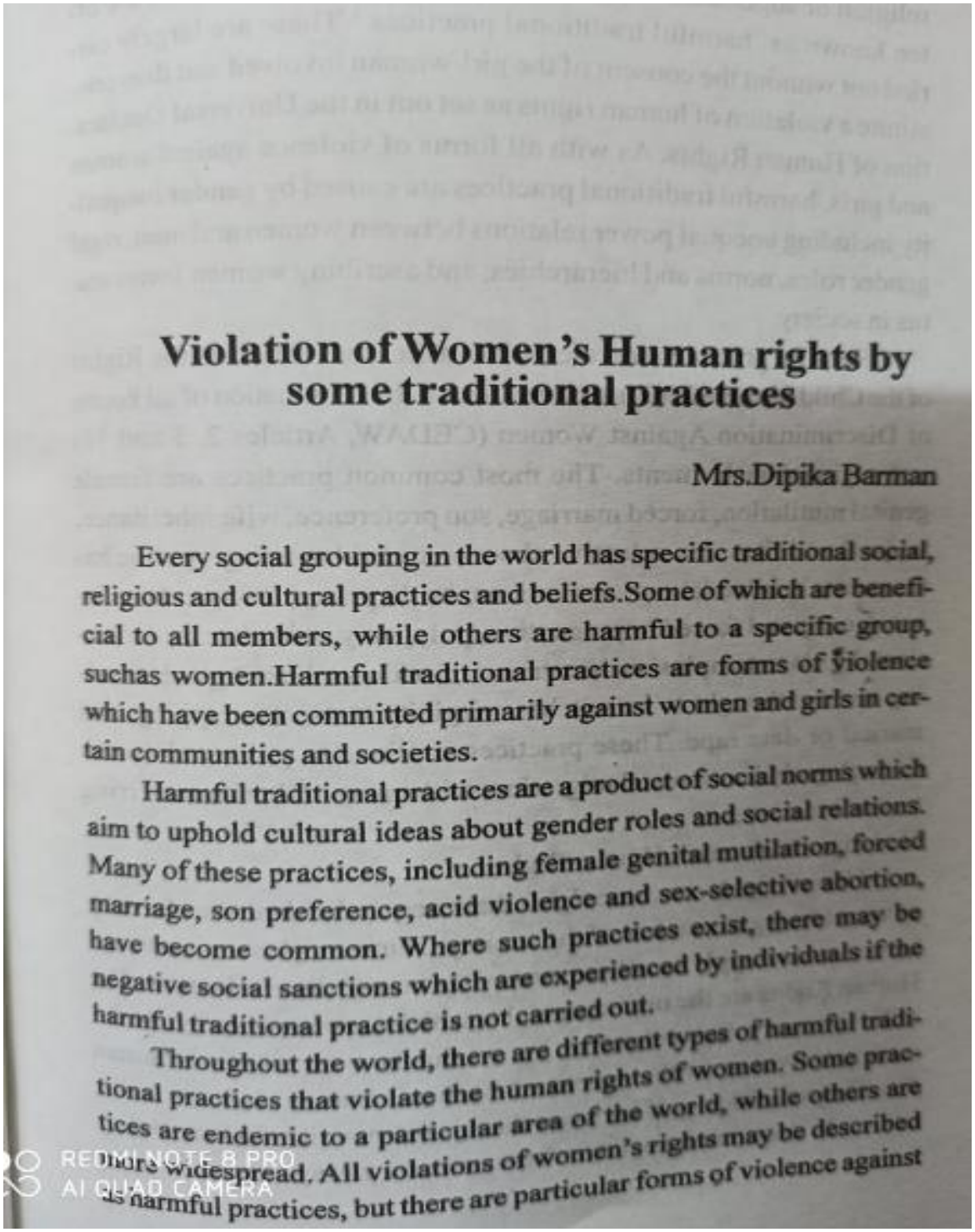

Violation of Women's Human rights by some traditional practices

Mrs.Dipika Barman

Every social grouping in the world has specific traditional social, religious and cultural practices and beliefs.Some of which are beneficial to all members, while others are harmful to a specific group, suchas women.Harmful traditional practices are forms of violence which have been committed primarily against women and girls in certain communities and societies.

Harmful traditional practices are a product of social norms which aim to uphold cultural ideas about gender roles and social relations. Many of these practices, including female genital mutilation, forced marriage, son preference, acid violence and sex-selective abortion, have become common. Where such practices exist, there may be negative social sanctions which are experienced by individuals if the harmful traditional practice is not carried out.

Throughout the world, there are different types of harmful traditional practices that violate the human rights of women. Some practices are endemic to a particular area of the world, while others are more widespread. All violations of women's rights may be described as harmful practices, but there are particular forms of violence against

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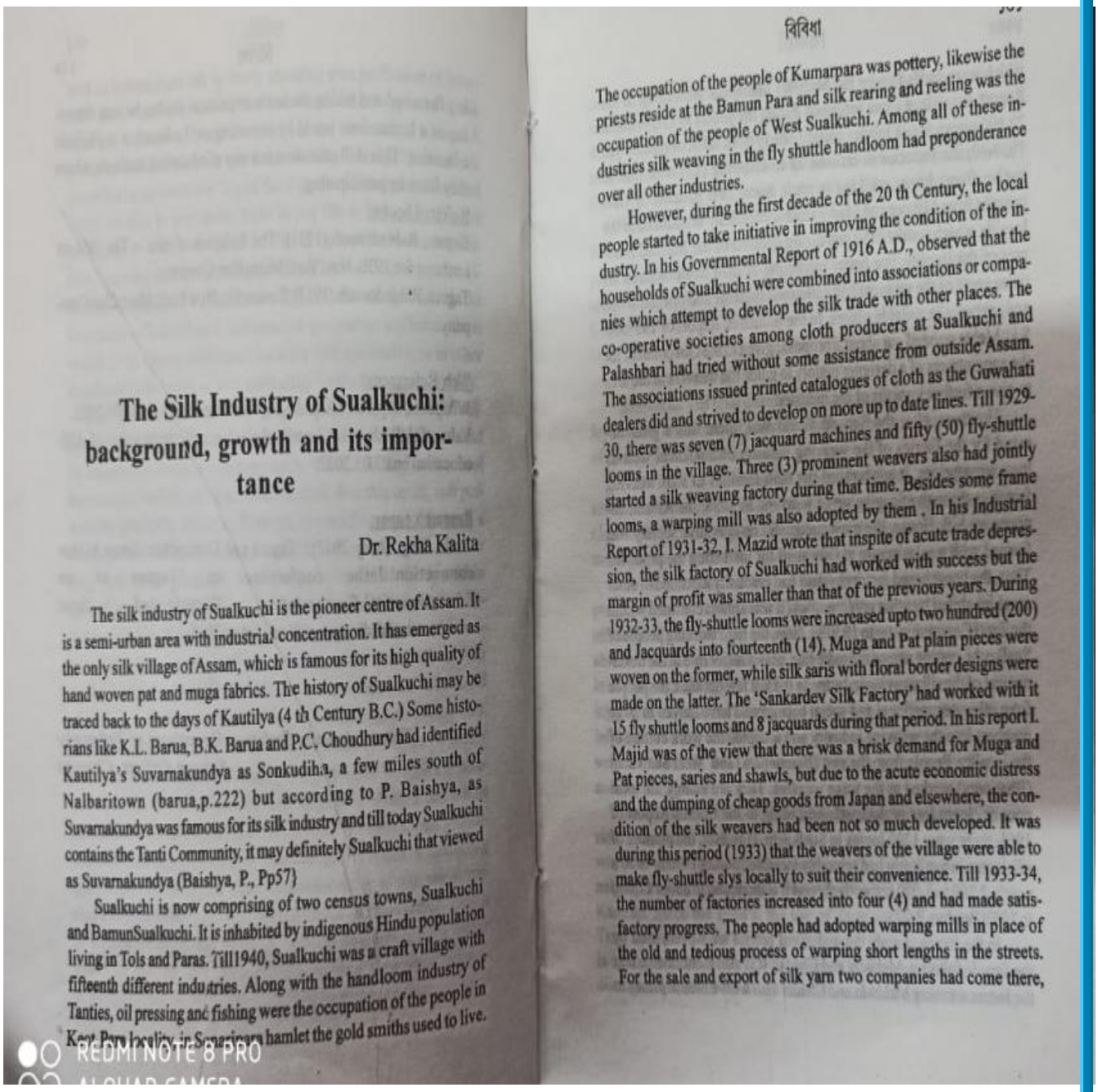

The Silk Industry of Sualkuchi: background, growth and its importance

Dr. Rekha Kalita

The silk industry of Sualkuchi is the pioneer centre of Assam. It is a semi-urban area with industrial concentration. It has emerged as the only silk village of Assam, which is famous for its high quality of hand woven pat and muga fabrics. The history of Sualkuchi may be traced back to the days of Kautilya (4 th Century B.C.) Some historians like K.L. Barua, B.K. Barua and P.C. Choudhury had identified Kautilya's Suvarnakundya as Sonkudiha, a few miles south of Nalbaritown (barua,p.222) but according to P. Baishya, as Suvarnakundya was famous for its silk industry and till today Sualkuchi contains the Tanti Community, it may definitely Sualkuchi that viewed as Suvarnakundya (Baishya, P., Pp57)

Sualkuchi is now comprising of two census towns, Sualkuchi and BamunSualkuchi. It is inhabited by indigenous Hindu population living in Tols and Paras. Till1940, Sualkuchi was a craft village with fifteenth different industries. Along with the handloom industry of Tanties, oil pressing and fishing were the occupation of the people in Kaat Para locality in Samaiguri hamlet the gold smiths used to live.

The occupation of the people of Kumarpara was pottery, likewise the priests reside at the Bamun Para and silk rearing and reeling was the occupation of the people of West Sualkuchi. Among all of these industries silk weaving in the fly shuttle handloom had preponderance over all other industries.

However, during the first decade of the 20 th Century, the local people started to take initiative in improving the condition of the industry. In his Governmental Report of 1916 A.D., observed that the households of Sualkuchi were combined into associations or companies which attempt to develop the silk trade with other places. The co-operative societies among cloth producers at Sualkuchi and Palashbari had tried without some assistance from outside Assam. The associations issued printed catalogues of cloth as the Guwahati dealers did and strived to develop on more up to date lines. Till 1929-30, there was seven (7) jacquard machines and fifty (50) fly-shuttle looms in the village. Three (3) prominent weavers also had jointly started a silk weaving factory during that time. Besides some frame looms, a warping mill was also adopted by them . In his Industrial Report of 1931-32, I. Mazid wrote that inspite of acute trade depression, the silk factory of Sualkuchi had worked with success but the margin of profit was smaller than that of the previous years. During 1932-33, the fly-shuttle looms were increased upto two hundred (200) and Jacquards into fourteenth (14). Muga and Pat plain pieces were woven on the former, while silk saris with floral border designs were made on the latter. The 'Sankardev Silk Factory' had worked with it 15 fly shuttle looms and 8 jacquards during that period. In his report I. Majid was of the view that there was a brisk demand for Muga and Pat pieces, saries and shawls, but due to the acute economic distress and the dumping of cheap goods from Japan and elsewhere, the condition of the silk weavers had been not so much developed. It was during this period (1933) that the weavers of the village were able to make fly-shuttle slys locally to suit their convenience. Till 1933-34, the number of factories increased into four (4) and had made satisfactory progress. The people had adopted warping mills in place of the old and tedious process of warping short lengths in the streets. For the sale and export of silk yarn two companies had come there,

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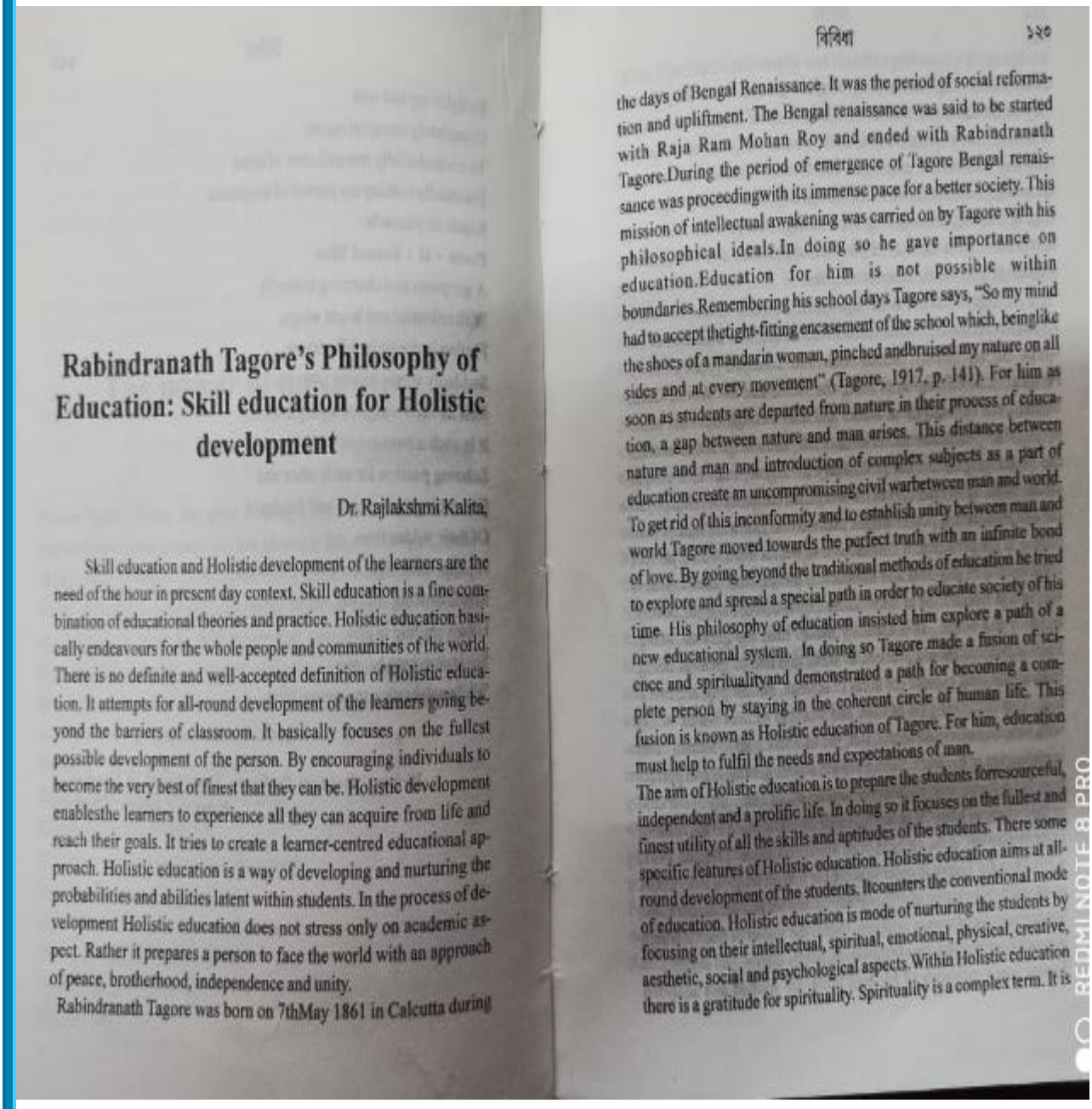

Rabindranath Tagore's Philosophy of Education: Skill education for Holistic development

Dr. Rajlakshmi Kalita,

Skill education and Holistic development of the learners are the need of the hour in present day context. Skill education is a fine combination of educational theories and practice. Holistic education basically endeavours for the whole people and communities of the world. There is no definite and well-accepted definition of Holistic education. It attempts for all-round development of the learners going beyond the barriers of classroom. It basically focuses on the fullest possible development of the person. By encouraging individuals to become the very best of finest that they can be. Holistic development enablesthe learners to experience all they can acquire from life and reach their goals. It tries to create a learner-centred educational approach. Holistic education is a way of developing and nurturing the probabilities and abilities latent within students. In the process of development Holistic education does not stress only on academic aspect. Rather it prepares a person to face the world with an approach of peace, brotherhood, independence and unity.

Rabindranath Tagore was born on 7thMay 1861 in Calcutta during

the days of Bengal Renaissance. It was the period of social reformation and upliftment. The Bengal renaissance was said to be started with Raja Ram Mohan Roy and ended with Rabindranath Tagore.During the period of emergence of Tagore Bengal renaissance was proceedingwith its immense pace for a better society. This mission of intellectual awakening was carried on by Tagore with his philosophical ideals.In doing so he gave importance on education.Education for him is not possible within boundaries.Remembering his school days Tagore says, "So my mind had to accept thetight-fitting encasement of the school which, beinglike the shoes of a mandarin woman, pinched andbruised my nature on all sides and at every movement" (Tagore, 1917, p. 141). For him as soon as students are departed from nature in their process of education, a gap between nature and man arises. This distance between nature and man and introduction of complex subjects as a part of education create an uncompromising civil warbetween man and world. To get rid of this inconformity and to establish unity between man and world Tagore moved towards the perfect truth with an infinite bood of love. By going beyond the traditional methods of education he tried to explore and spread a special path in order to educate society of his time. His philosophy of education insisted him explore a path of a new educational system. In doing so Tagore made a fusion of science and spiritualityand demonstrated a path for becoming a complete person by staying in the coherent circle of human life. This fusion is known as Holistic education of Tagore. For him, education must help to fulfil the needs and expectations of man.

The aim of Holistic education is to prepare the students forresourceful, independent and a prolific life. In doing so it focuses on the fullest and finest utility of all the skills and aptitudes of the students. There some specific features of Holistic education. Holistic education aims at all-round development of the students. Itcounters the conventional mode of education. Holistic education is mode of nurturing the students by focusing on their intellectual, spiritual, emotional, physical, creative, aesthetic, social and psychological aspects. Within Holistic education there is a gratitude for spirituality. Spirituality is a complex term. It is

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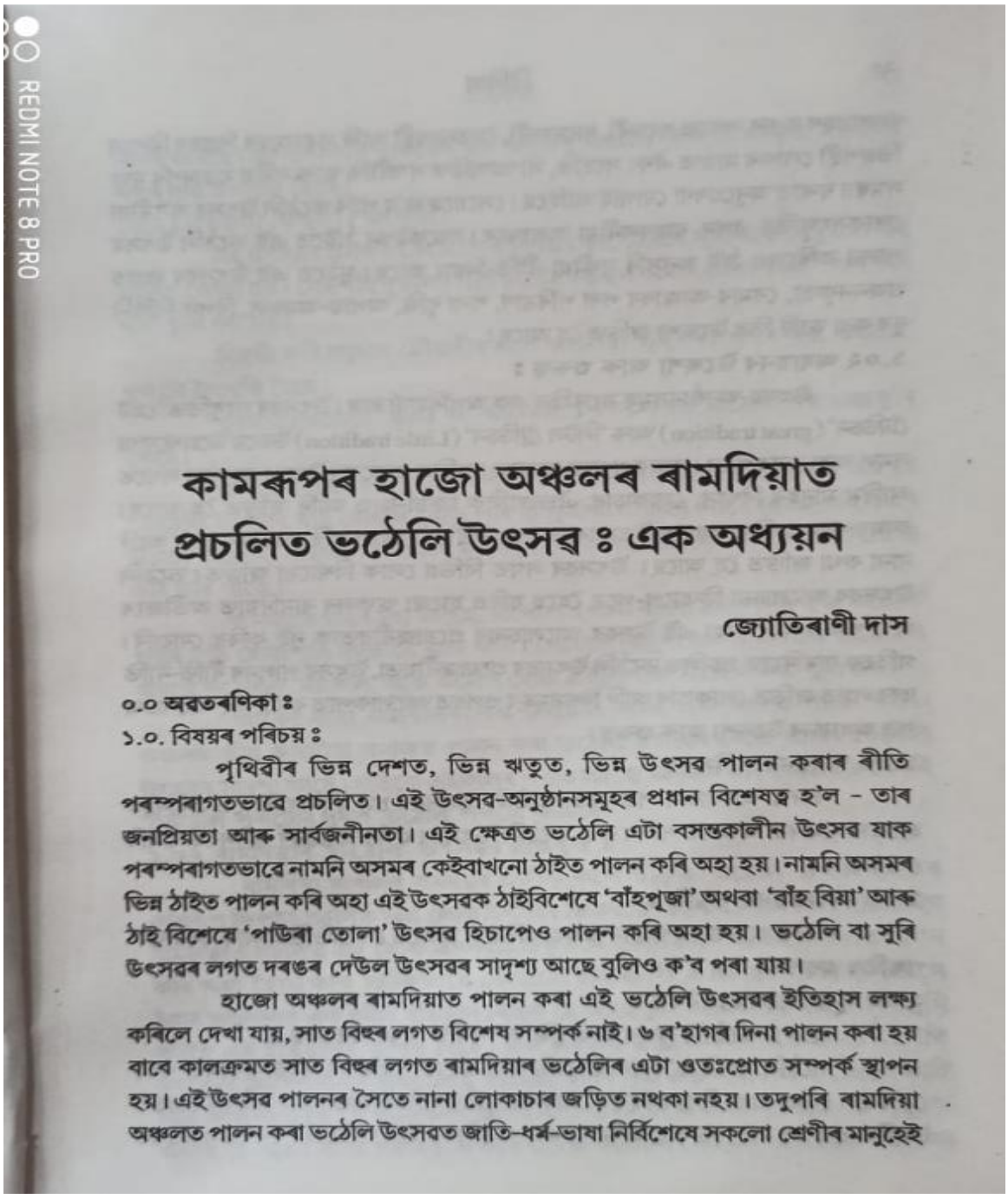

কামৰূপৰ হাজো অঞ্চলৰ ৰামদিয়াত প্ৰচলিত ভঠেলি উৎসৱ ঃ এক অধ্যয়ন

জ্যোতিৰাণী দাস

০.০ অৱতৰণিকা ঃ

১.০. বিষয়ৰ পৰিচয় ঃ

পৃথিবীৰ ভিন্ন দেশত, ভিন্ন ঋতুত, ভিন্ন উৎসৱ পালন কৰাৰ ৰীতি পৰম্পৰাগতভাৱে প্ৰচলিত। এই উৎসৱ-অনুষ্ঠানসমূহৰ প্ৰধান বিশেষত্ব হ'ল - তাৰ জনপ্ৰিয়তা আৰু সাৰ্বজনীনতা। এই ক্ষেত্ৰত ভঠেলি এটা বসন্তকালীন উৎসৱ যাক পৰম্পৰাগতভাৱে নামনি অসমৰ কেইবাখনো ঠাইত পালন কৰি অহা হয়। নামনি অসমৰ ভিন্ন ঠাইত পালন কৰি অহা এই উৎসৱক ঠাইবিশেষে 'বাঁহপূজা' অথবা 'বাঁহ বিয়া' আৰু ঠাই বিশেষে 'পাডিৰা তোলা' উৎসৱ হিচাপেও পালন কৰি অহা হয়। ভঠেলি বা সুৰি উৎসৱৰ লগত দৰঙৰ দেউল উৎসৱৰ সাদৃশ্য আছে বুলিও ক'ব পৰা যায়।

হাজো অঞ্চলৰ ৰামদিয়াত পালন কৰা এই ভঠেলি উৎসৱৰ ইতিহাস লক্ষ্য কৰিলে দেখা যায়, সাত বিহুৰ লগত বিশেষ সম্পৰ্ক নাই। ৬ ব'হাগৰ দিনা পালন কৰা হয় বাবে কালক্ৰমত সাত বিহুৰ লগত ৰামদিয়াৰ ভঠেলিৰ এটা ওতঃপ্ৰোত সম্পৰ্ক স্থাপন হয়। এই উৎসৱ পালনৰ সৈতে নানা লোকাচাৰ জড়িত নথকা নহয়। তদুপৰি ৰামদিয়া অঞ্চলত পালন কৰা ভঠেলি উৎসৱত জাতি-ধৰ্ম-ভাষা নিৰ্বিশেষে সকলো শ্ৰেণীৰ মানুহেই

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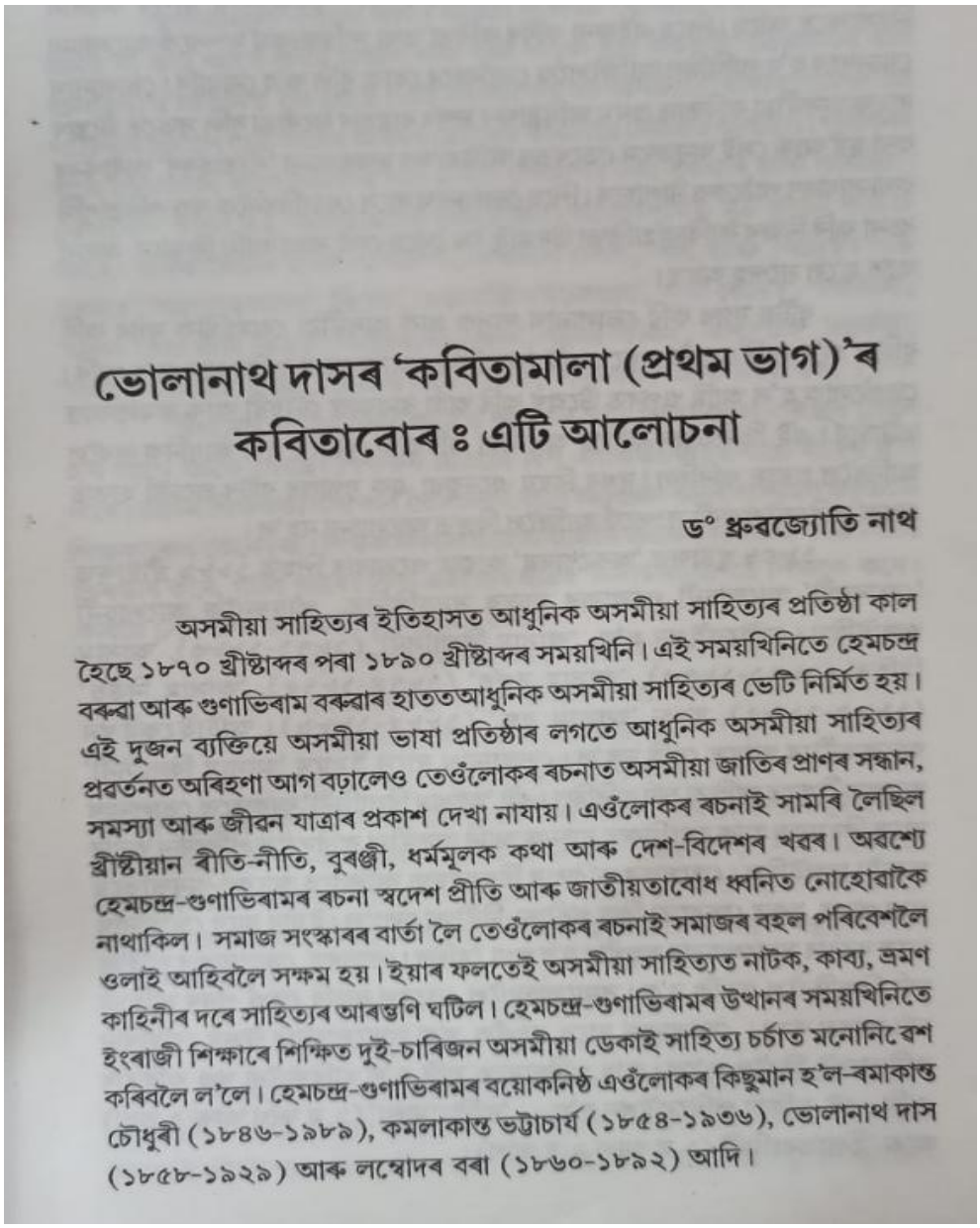

ভোলানাথ দাসৰ 'কবিতামালা (প্ৰথম ভাগ)'ৰ কবিতাবোৰ ঃ এটি আলোচনা

ড° ধ্ৰুৱজ্যোতি নাথ

অসমীয়া সাহিত্যৰ ইতিহাসত আধুনিক অসমীয়া সাহিত্যৰ প্ৰতিষ্ঠা কাল হৈছে ১৮৭০ খ্ৰীষ্টাব্দৰ পৰা ১৮৯০ খ্ৰীষ্টাব্দৰ সময়খিনি। এই সময়খিনিতে হেমচন্দ্ৰ বৰুৱা আৰু গুণাভিৰাম বৰুৱাৰ হাততআধুনিক অসমীয়া সাহিত্যৰ ভেটি নিৰ্মিত হয়। এই দুজন ব্যক্তিয়ে অসমীয়া ভাষা প্ৰতিষ্ঠাৰ লগতে আধুনিক অসমীয়া সাহিত্যৰ প্ৰৱৰ্তনত অৰিহণা আগ বঢ়ালেও তেওঁলোকৰ ৰচনাত অসমীয়া জাতিৰ প্ৰাণৰ সন্ধান, সমস্যা আৰু জীৱন যাত্ৰাৰ প্ৰকাশ দেখা নাযায়। এওঁলোকৰ ৰচনাই সামৰি লৈছিল খ্ৰীষ্টীয়ান ৰীতি-নীতি, বুৰঞ্জী, ধৰ্মমূলক কথা আৰু দেশ-বিদেশৰ খবৰ। অৱশ্যে হেমচন্দ্ৰ-গুণাভিৰামৰ ৰচনা স্বদেশ প্ৰীতি আৰু জাতীয়তাবোধ ধ্বনিত নোহোৱাকৈ নাথাকিল। সমাজ সংস্কাৰৰ বাৰ্তা লৈ তেওঁলোকৰ ৰচনাই সমাজৰ বহল পৰিবেশলৈ ওলাই আহিবলৈ সক্ষম হয়। ইয়াৰ ফলতেই অসমীয়া সাহিত্যত নাটক, কাব্য, ভ্ৰমণ কাহিনীৰ দৰে সাহিত্যৰ আৰম্ভণি ঘটিল। হেমচন্দ্ৰ-গুণাভিৰামৰ উত্থানৰ সময়খিনিতে ইংৰাজী শিক্ষাৰে শিক্ষিত দুই-চাৰিজন অসমীয়া ডেকাই সাহিত্য চৰ্চাত মনোনিৱেশ কৰিবলৈ ল'লে। হেমচন্দ্ৰ-গুণাভিৰামৰ বয়োকনিষ্ঠ এওঁলোকৰ কিছুমান হ'ল-ৰমাকান্ত চৌধুৰী (১৮৪৬-১৯৮৯), কমলাকান্ত ভট্টাচাৰ্য (১৮৫৪-১৯৩৬), ভোলানাথ দাস (১৮৫৮-১৯২৯) আৰু লম্বোদৰ বৰা (১৮৬০-১৮৯২) আদি।

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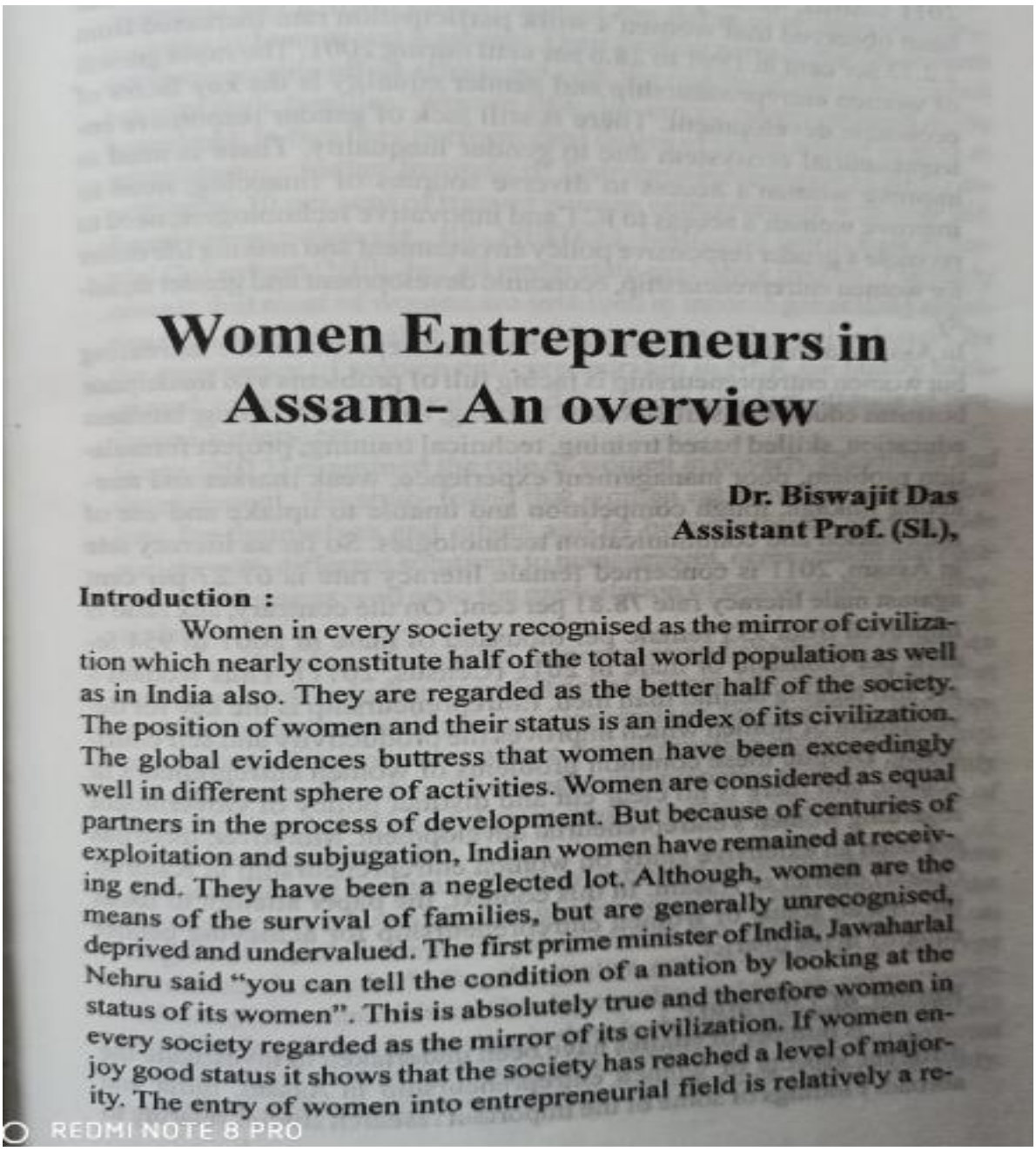

Women Entrepreneurs in Assam- An overview

Dr. Biswajit Das
Assistant Prof. (Sl.),

Introduction :

Women in every society recognised as the mirror of civilization which nearly constitute half of the total world population as well as in India also. They are regarded as the better half of the society. The position of women and their status is an index of its civilization. The global evidences buttress that women have been exceedingly well in different sphere of activities. Women are considered as equal partners in the process of development. But because of centuries of exploitation and subjugation, Indian women have remained at receiving end. They have been a neglected lot. Although, women are the means of the survival of families, but are generally unrecognised, deprived and undervalued. The first prime minister of India, Jawaharlal Nehru said "you can tell the condition of a nation by looking at the status of its women". This is absolutely true and therefore women in every society regarded as the mirror of its civilization. If women enjoy good status it shows that the society has reached a level of majority. The entry of women into entrepreneurial field is relatively a re-

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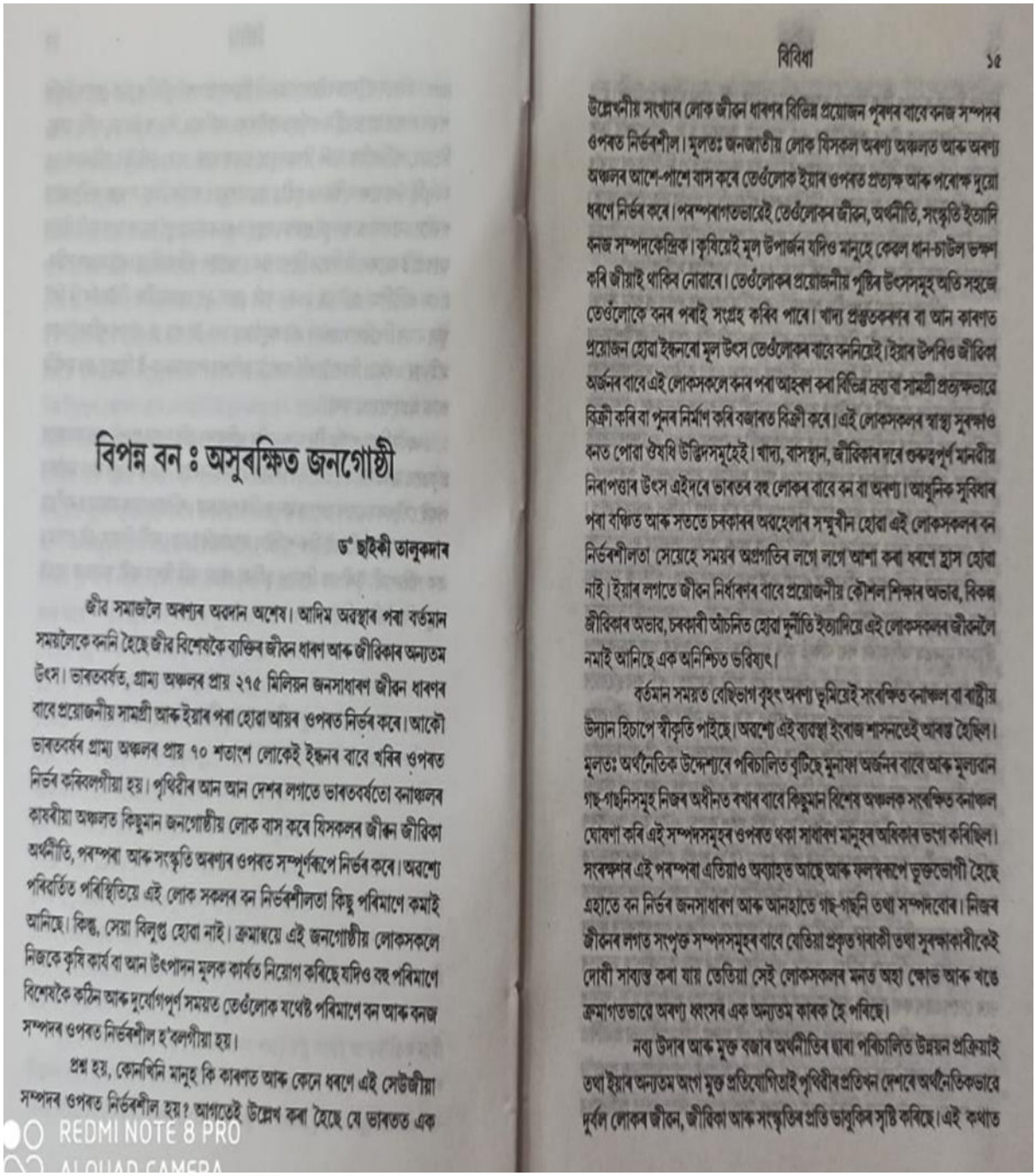

বিপন্ন বন ঃ অসুৰক্ষিত জনগোষ্ঠী

ড° ছইকী তালুকদাৰ

জীৱ সমাজলৈ অৰণ্যৰ অৱদান অশেষ। আদিম অৱস্থাৰ পৰা বৰ্তমান সময়লৈকে কনি হৈছে জীৱ বিশেষকৈ ব্যক্তিৰ জীৱন ধাৰণ আৰু জীৱিকাৰ অন্যতম উৎস। ভাৰতবৰ্ষত, গ্ৰাম্য অঞ্চলৰ প্ৰায় ২৭৫ মিলিয়ন জনসাধাৰণ জীৱন ধাৰণৰ বাবে প্ৰয়োজনীয় সামগ্ৰী আৰু ইয়াৰ পৰা হোৱা আয়ৰ ওপৰত নিৰ্ভৰ কৰে। আফ্ৰী ভাৰতবৰ্ষৰ গ্ৰাম্য অঞ্চলৰ প্ৰায় ৭০ শতাংশ লোকেই ইন্ধনৰ বাবে খৰিৰ ওপৰত নিৰ্ভৰ কৰিবলগীয়া হয়। পৃথিৱীৰ আন আন দেশৰ লগতে ভাৰতবৰ্ষতো কাঞ্চলৰ কাষৰীয়া অঞ্চলত কিছুমান জনগোষ্ঠীয় লোক বাস কৰে যিসকলৰ জীৱন জীৱিকা অৰ্থনীতি, পৰম্পৰা আৰু সংস্কৃতি অৰণ্যৰ ওপৰত সম্পূৰ্ণকপে নিৰ্ভৰ কৰে। অৱশ্যে পৰিবৰ্তিত পৰিস্থিতিয়ে এই লোক সকলৰ বন নিৰ্ভৰশীলতা কিছু পৰিমাণে কমাই আনিছে। কিন্তু, সেয়া বিলুপ্ত হোৱা নাই। ক্ৰমান্বয়ে এই জনগোষ্ঠীয় লোকসকলে নিজকে কৃষি কাৰ্য বা আন উৎপাদন মূলক কাৰ্যত নিয়োগ কৰিছে যদিও বহু পৰিমাণে বিশেষকৈ কঠিন আৰু দুৰ্যোগপূৰ্ণ সময়ত তেওঁলোক যথেষ্ট পৰিমাণে বন আৰু বনজ সম্পদৰ ওপৰত নিৰ্ভৰশীল হ'বলগীয়া হয়।

প্ৰশ্ন হয়, কোনখিনি মানুহ কি কাৰণত আৰু কেনে ধৰণে এই সেউজীয়া সম্পদৰ ওপৰত নিৰ্ভৰশীল হয়? আগতেই উল্লেখ কৰা হৈছে যে ভাৰততে এক

উল্লেখনীয় সংখ্যাৰ লোক জীৱন ধাৰণৰ বিভিন্ন প্ৰয়োজন পূৰণৰ বাবে বনজ সম্পদৰ ওপৰত নিৰ্ভৰশীল। মূলতঃ জনজাতীয় লোক যিসকল অৰণ্য অঞ্চলত আৰু অৰণ্য অঞ্চলৰ আশে-পাশে বাস কৰে তেওঁলোক ইয়াৰ ওপৰত প্ৰত্যক্ষ আৰু পৰোক্ষ দুয়ো ধৰণে নিৰ্ভৰ কৰে। পৰম্পৰাগতভাৱেই তেওঁলোকৰ জীৱন, অৰ্থনীতি, সংস্কৃতি ইত্যাদি বনজ সম্পদকেন্দ্ৰিক। কৃষিয়েই মূল উপাৰ্জন যদিও মানুহে কেৱল ধান-চাউল ভক্ষণ কৰি জীয়াই থাকিব নোৱাৰে। তেওঁলোকৰ প্ৰয়োজনীয় পুষ্টিৰ উৎসসমূহ অতি সহজে তেওঁলোকে বনৰ পৰাই সংগ্ৰহ কৰিব পাৰে। খাদ্য প্ৰস্তুতকৰণৰ বা আন কাৰণত প্ৰয়োজন হোৱা ইন্ধনৰো মূল উৎস তেওঁলোকৰ বাবে বনিয়েই। ইয়াৰ উপৰিও জীৱিকা অৰ্জনৰ বাবে এই লোকসকলে বনৰ পৰা আহৰণ কৰা বিভিন্ন দ্ৰব্য বা সামগ্ৰী প্ৰত্যক্ষভাৱে বিক্ৰী কৰি বা পুনৰ নিৰ্মাণ কৰি বজাৰত বিক্ৰী কৰে। এই লোকসকলৰ স্বাস্থ্য সুৰক্ষাও বনত পোৱা ঔষধি উদ্ভিদসমূহেই। খাদ্য, বাসস্থান, জীৱিকাৰ দৰে গুৰুত্বপূৰ্ণ মানৱীয় নিৰাপত্তাৰ উৎস এইদৰে ভাৰতৰ বহু লোকৰ বাবে বন বা অৰণ্য। আধুনিক সুবিধাৰ পৰা বঞ্চিত আৰু সততে চৰকাৰৰ অৱহেলাৰ সম্মুখীন হোৱা এই লোকসকলৰ বন নিৰ্ভৰশীলতা সেয়েহে সময়ৰ অগ্ৰগতিৰ লগে লগে আশা কৰা ধৰণে হ্ৰাস হোৱা নাই। ইয়াৰ লগতে জীৱন নিৰ্বাহৰ বাবে প্ৰয়োজনীয় কৌশল শিক্ষাৰ অভাৱ, বিকল্প জীৱিকাৰ অভাৱ, চৰকাৰী আঁচনিত হোৱা দুৰ্নীতি ইত্যাদিয়ে এই লোকসকলৰ জীৱনলৈ নমাই আনিছে এক অনিশ্চিত ভৱিষ্যৎ।

বৰ্তমান সময়ত বেছিভাগ বৃহৎ অৰণ্য ভূমিয়েই সংৰক্ষিত বনাঞ্চল বা ৰাষ্ট্ৰীয় উদ্যান হিচাপে স্বীকৃতি পাইছে। অৱশ্যে এই ব্যৱস্থা ইংৰাজ শাসনতেই আৰম্ভ হৈছিল। মূলতঃ অৰ্থনৈতিক উদ্দেশ্যৰে পৰিচালিত বৃটিছে মুনাফা অৰ্জনৰ বাবে আৰু মূল্যবান গছ-গছনিসমূহ নিজৰ অধীনত ৰখাৰ বাবে কিছুমান বিশেষ অঞ্চলক সংৰক্ষিত বনাঞ্চল ঘোষণা কৰি এই সম্পদসমূহৰ ওপৰত থকা সাধাৰণ মানুহৰ অধিকাৰ ভংগ কৰিছিল। সংৰক্ষণৰ এই পৰম্পৰা এতিয়াও অব্যাহত আছে আৰু ফলস্বৰূপে ভুক্তভোগী হৈছে এহাতে বন নিৰ্ভৰ জনসাধাৰণ আৰু আনহাতে গছ-গছনি তথা সম্পদৰোৰ। নিজৰ জীৱনৰ লগত সংপৃক্ত সম্পদসমূহৰ বাবে যেতিয়া প্ৰকৃত গৰাকী তথা সুৰক্ষাকাৰীকেই দোষী সাব্যস্ত কৰা যায় তেতিয়া সেই লোকসকলৰ মনত অহা ক্ষোভ আৰু খণ্ডে ক্ৰমাগতভাৱে অৰণ্য ধ্বংসৰ এক অন্যতম কাৰক হৈ পৰিছে।

নব্য উদাৰ আৰু মুক্ত বজাৰ অৰ্থনীতিৰ দ্বাৰা পৰিচালিত উন্নয়ন প্ৰক্ৰিয়াই তথা ইয়াৰ অন্যতম অংগ মুক্ত প্ৰতিযোগিতাই পৃথিৱীৰ প্ৰতিখন দেশৰে অৰ্থনৈতিকভাৱে দুৰ্বল লোকৰ জীৱন, জীৱিকা আৰু সংস্কৃতিৰ প্ৰতি ভাবুকিৰ সৃষ্টি কৰিছে। এই কথাত

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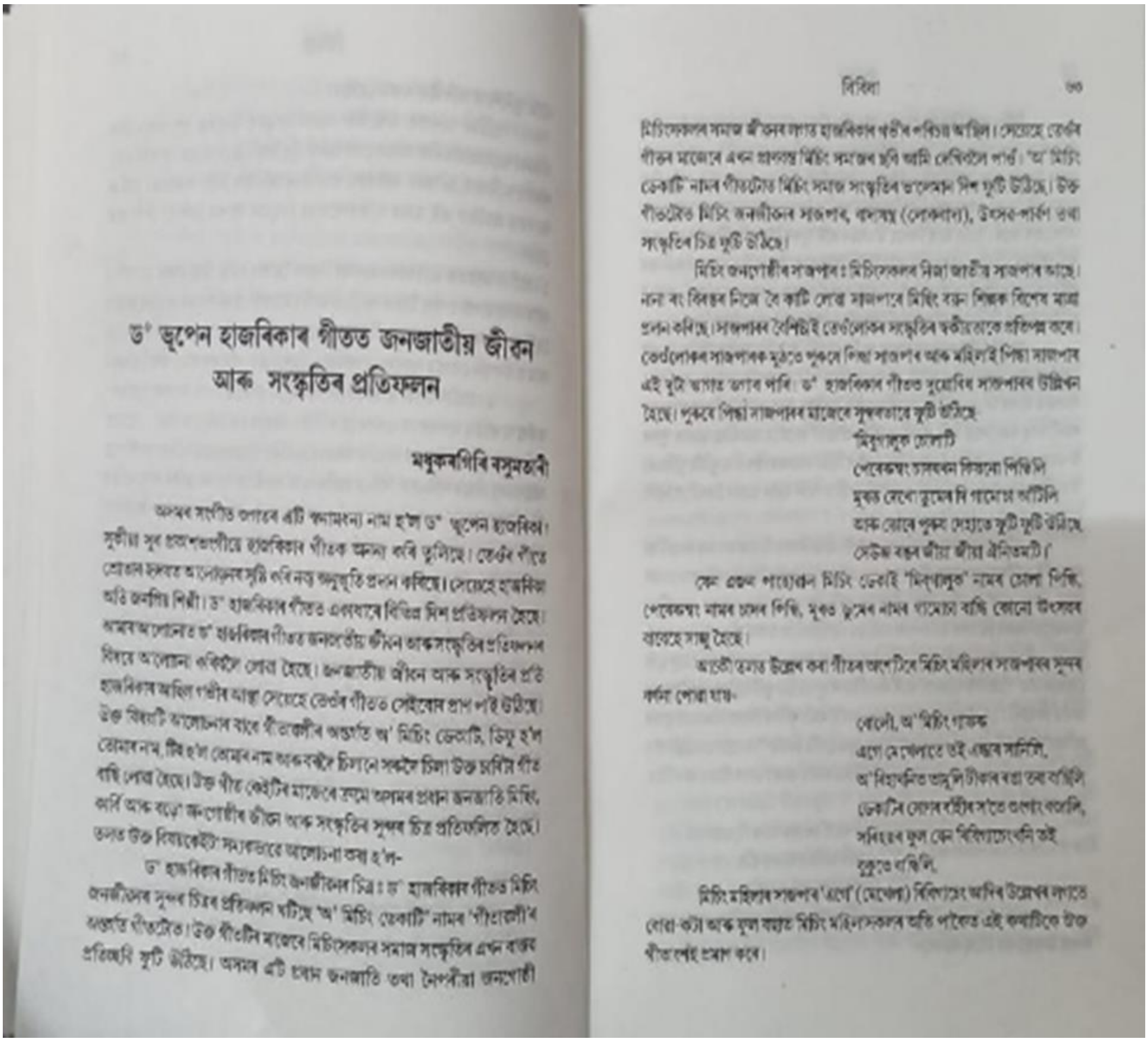

ড° ভূপেন হাজৰিকাৰ গীতত জনজাতীয় জীৱন আৰু সংস্কৃতিৰ প্ৰতিফলন

মধুকৰগিৰি বসুমতাৰী

বিহিৰা ৩৩

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Skills of Communication

Dr. Sanjib Kumar Goswami

Lexically, the word 'skill' refers to an ability to do an activity or job well, especially because one has practiced it. In other words, it is the learned proficiency to accomplish encoded results often with minimum outlay of time, energy, or both. In every domain of our life, skills give us the necessary respite for shining to the desired level with ease and comfort, and being able to communicate effectively is the most important of all life skills.

The word 'communication' which derives its origin from Latin 'communis', meaning 'to share', is the activity of conveying information through the exchange of thoughts, information, or messages, as by speech, visuals, signals, writing, or behavior. In fact, communication is a complex process and it is not possible to communicate. Even when two people are refusing to talk to each other, they are communicating something- by silences, body language and other observable behavior.

All communications, intentional or unintentional, have some effect. This effect may not be always in communicator's favor or as desired by him or her. Poor communication can never yield desired effect; instead, it causes conflict, misunderstanding, hurt and resentment. Effective communication generates the desired effect serving its purpose (the purpose could be to generate action, inform, create understanding or communicate a certain idea/point etc.) for which it was planned or designed and ensures that message distortion does not take place during the communication process.

Professionally, if we are applying for jobs or looking for a promotion, undoubtedly we have to display good communication

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skills. As our career progresses, the importance of communication skills increases; the appropriate skill to speak, listen, question and write with clarity and conciseness are most essential things to employable after completion of collegiate education.

The four communication skill viz. listening, reading, speaking and writing are important enough to deserve the attention of learners of communication skill. While we are used to listening and reading we fear a lot when we turn to speaking and writing. The fear is well understood- we are not challenged about our listening and reading skill, we dare not speak and write unless we are not comfortable enough in exposed environment. Here in this essay, an attempt has been made to briefly elaborate all the four skills involved in the process of communication.

A. Listening skill:

Generally, listening is considered as the active process of eliciting information which involves mind, senses, attitudes and emotions. If we listen effectively then seemingly we will appear as a more helpful, more "in tune" person in communication process, and accordingly we will be able to exert more influence over others than those that are less effective listeners. To be an effective communicator, one has to be an effective listener in both the personal sphere and at the workplace. Therefore, it is important to master the skill of listening. Unfortunately, many people equate listening with hearing. On the contrary, 'hearing' is only one of the three basic steps of listening process- the other two being 'understanding' and 'judging'.

A.1.Hearing: Hearing is the first step of listening, and as one of the traditional five senses it refers to the ability to perceive sound by detecting vibrations via an organ such as the ear. In simple, hearing implies listening enough to catch what the speaker is saying. For example, if we were listening to a lecture on the communication skill in which the speaker is talking about the four skills of the same, then we should be able to repeat the fact of his lecture. If wecan do so, it means that we have heard him properly.

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