



राष्ट्रीय प्रौद्योगिकी संस्थान रायपुर
NATIONAL INSTITUTE OF TECHNOLOGY RAIPUR
(An Institute of National Importance)
G.E. Road, Raipur, Chhattisgarh - 492010, India.

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BACHELOR OF TECHNOLOGY

OFFICIAL TRANSCRIPT

1. This is to certify that Mr./Ms. **RAJAT ANAND** Roll No. **15112036** was a bona-fide student of National Institute of Technology Raipur, India from July 2015 to May 2019 for the **Bachelor's Degree in Technology (B.TECH.)** programme in **BIO TECHNOLOGY** and has successfully completed all the 8 semesters.

2. The following is the detailed examination/marketing scheme as prescribed for the degree course in **BIO TECHNOLOGY** and his/her performance in the semester examinations:-

- Period of study: 4 years (8 semesters).
- Academic year is divided into two semesters; each semester is normally of 90 working days.
- Medium of Instruction : **ENGLISH**

3. Detailed Transcripts of Academic Records are enclosed herewith.


(Ajaii Sharma)
Joint Registrar
National Institute of Technology
Raipur (C.G.)

Enclosure:- As above.



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EXPLANATION OF MARKING SCHEME

• **GRADING SYSTEM**

Letter Grade	Grade Point	Theory	Practical
A+	10	85 ≤ Marks ≤ 100% .	90 ≤ Marks ≤ 100% .
A	9	75 ≤ Marks < 85% .	82 ≤ Marks < 90% .
B+	8	65 ≤ Marks < 75% .	74 ≤ Marks < 82% .
B	7	55 ≤ Marks < 65% .	66 ≤ Marks < 74% .
C+	6	45 ≤ Marks < 55% .	58 ≤ Marks < 66% .
C	5	35 ≤ Marks < 45% .	50 ≤ Marks < 58% .
F	0	0 ≤ Marks < 35% .	0 ≤ Marks < 50% .

Grades will be awarded for every subject theory and practical separately.

- Should have passed all theory & practical subject as above and have obtained minimum 5.75 SPI.

• **SEMESTER PERFORMANCE INDEX (SPI)**

$$SPI_i = \frac{[C_1 Gr_1 + C_2 Gr_2 + \dots] i}{[C_1 + C_2 + \dots] i} = \frac{[\sum C Gr] i}{[\sum C] i} = \frac{Ni}{Di}$$

Where C and Gr stand for Credit and Grade. respectively.

• **CUMULATIVE PERFORMANCE INDEX (CPI)**

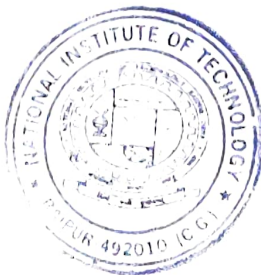
$$CPI_i = \frac{0.5 (N_1 + N_2) + \sum_{i=3}^{i \geq K} Ni}{0.5 (D_1 + D_2) + \sum_{i=3}^{i \geq K} Di}$$

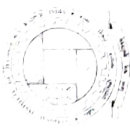
K is 8 for B. Tech. and 10 for B. Arch. programs.

- **AWARD OF CLASS OR DIVISION (Awarded only at the end of course)**

Distinction or Honors	More than or equal to 8.25
Class I	7.25 ≤ CPI < 8.25
Class II	5.75 ≤ CPI < 7.25

- **MEDIUM OF INSTRUCTION: ENGLISH (FOR ALL SEMESTERS)**





DEGREE : B.Tech.
BRANCH : BIO TECHNOLOGY
NAME : RAJAT ANAND

ROLL No. : 15112036
ENROLLNO : 151137

SEMESTER : I

Course Code	SUBJECT	Grade	GD	Credit
020211105	Language (Professional Communication in English)	A+	10	2
020212104	Applied Chemistry	A	9	4
020213104	Applied Physics	B+	8	4
020214104	Applied Maths-I	B+	8	4
020215104	Basic Electrical Engineering	B+	8	4
020216104	Engineering Mechanics	B	7	4
020217104	Chemistry Lab	A	9	1
020218104	Physics Lab	B+	8	1
020219104	Electrical Engineering Lab	C	5	1
020220104	Engineering Mechanics Lab	B+	8	1
020221104	Workshop	A	9	3
020222104	Communication Skills	A+	10	1
020223104	NCC/NSS/Sports	A+	10	1
PASS			SPI : 8.29	CPI : 8.29

SEMESTER : II

Course Code	SUBJECT	Grade	GD	Credit
020224104	Engineering Graphics	A	9	2
020225104	Environment & Ecology	A+	10	4
020226104	Basic Electronics	A+	10	4
020227104	Applied Maths-II	A	10	4
020228104	Basic Mechanical & Civil Engineering	A	9	5
020229104	Fundamentals of Computer Science & Information Technology	A	9	4
020230104	Engineering Graphics Lab	A+	10	2
020231104	Environment & Ecology Lab	A+	10	1
020232104	Basic Electronics Lab	A+	10	1
020233104	Basic Civil Engineering Lab	B+	8	1
020234104	Fundamentals of Computer Sc. & Information Technology Lab	B+	8	1
020235104	Health, Hygiene & Yoga	A+	10	2
PASS			SPI : 9.51	CPI : 8.90

SEMESTER : III

Course Code	SUBJECT	Grade	GD	Credit
BT2031107	Bio Chemistry	A+	10	4
BT2031207	Cell & Molecular Biology	A+	10	4
BT2031307	Bio Physics	A+	10	4
BT2031407	Stoichiometric Calculations	A+	10	5
BT2031507	Bio Chemistry (Lab)	A	9	2
BT2031607	Cell & Molecular Biology (Lab)	A+	10	2
BT2031707	Discipline	A+	10	1
BT2031807	Personality Development	A+	10	1
BT2031907	Object Oriented Programming	A	9	4
BT2032007	Programming Language (Lab)	A+	10	2
BT2032107	Mathematics - III	A+	10	4
PASS			SPI : 9.81	CPI : 9.37

SEMESTER : IV

Course Code	SUBJECT	Grade	GD	Credit
BT2041107	Microbiology	A	9	4
BT2041207	Plant Biotechnology	A+	10	4
BT2041307	Food Biotechnology	A+	10	4
BT2041407	Recombinant DNA Technology	A+	10	4
BT2041507	Thermodynamics & Reaction Engineering	A+	10	5
BT2041607	Plant BT Lab	A+	10	2
BT2041707	Microbio Lab	A+	10	2
BT2041807	RDNA Lab	A+	10	2
BT2041907	Discipline	A+	10	1
BT2042007	Value Education	A+	10	1
BT2042107	Numerical Analysis	A+	10	4
PASS			SPI : 9.87	CPI : 9.54

SEMESTER : V

Course Code	SUBJECT	Grade	GD	Credit
BT2051107	Animal Biotechnology	A	9	4
BT2051207	Enzyme Technology	A	9	4
BT2051307	Drug Design & Pharma Technology	A+	10	4
BT2051407	Bioethics & Biosafety	A+	10	4
BT2051507	Immunology	A+	10	4
BT2051607	Fluid Flow Operation	A+	10	5
BT2051707	Fluid Flow Operation Lab	B+	8	2
BT2051807	Enzyme Technology Lab	A	9	2
BT2051907	Immunology Lab	A+	10	2
BT2052007	Technical Visit/Practical Training	A+	10	1
BT2052107	Managerial Skill	B+	8	1
PASS			SPI : 9.51	CPI : 9.53

SEMESTER : VI

Course Code	SUBJECT	Grade	GD	Credit
BT2061107	Bioinformatics	A+	10	4
BT2061207	Analytical Techniques in Biotechnology	A+	10	4
BT2061307	Management Science	A	9	4
BT2061407	Database Management System	B	7	4
BT2061507	Biostatistics & Probability	A+	10	4
BT2061607	Heat & Mass Transfer	A+	10	5
BT2061707	Bioinformatics Lab	B+	8	2
BT2061807	Analytical Techniques in Biotechnology Lab	A+	10	2
BT2061907	Heat & Mass Transfer Lab	B+	8	2
BT2062007	Discipline	A	9	1
BT2062107	I & E Skill	A+	10	1
PASS			SPI : 9.24	CPI : 9.47

SEMESTER : VII

Course Code	SUBJECT	Grade	GD	Credit
BT 20711 BT	Genomics	A+	10	4
BT 20712 BT	Microbial Technology	A	9	4
BT 20713 BT	Unit Operation	A+	10	4
BT 20714 BT	Microbial Tech. Lab	B+	8	2
BT 20715 BT	Unit Operation Lab	B	7	2
BT 20716 BT	Seminar & Report Writing	A+	10	1
BT 20717 BT	Bioprocess Technology	A+	10	4
BT 20718 BT	Practical Training	A+	10	2
BT 20719 BT	Minor Project	A+	10	6
PASS			SPI : 9.51	CPI : 9.48

SEMESTER : VIII

Course Code	SUBJECT	Grade	GD	Credit
BT 20811 BT	Metabolic Engineering	B+	8	4
BT 20812 BT	Environmental Biotechnology	A	9	4
BT 20813 BT	Metabolic Engineering Lab	A	9	2
BT 20814 BT	Environmental Biotechnology Lab	B	7	2
BT 20815 BT	Process Equipment & Bioreactor Designing	A+	10	4
BT 20816 BT	Proteomics	A	9	4
BT 20817 BT	Major Project	A+	10	8
BT 20818 BT	Discipline	C+	6	1
PASS			SPI : 9.03	CPI : 9.42

