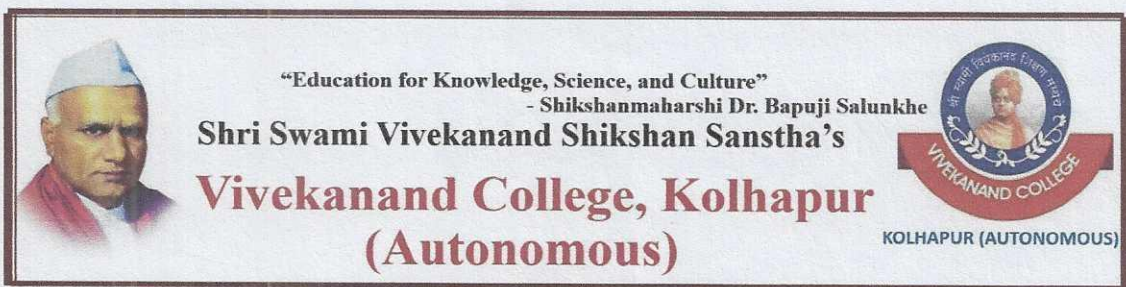


Department of Mathematics

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CO-PO-PSO Attainment of B.Sc. III 2020-21

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Department of Mathematics

B.Sc. III

CO-PO-PSO Attainment verification 2020-21

CO attainment verification:

Course Name	Course Code	CO Target	CO Attainment	Fully attained or not	Action taken
Real Analysis and Modern Algebra	DSC-1003E1	3	3.0	attained	
Matrix Algebra and Numerical Methods I	DSC-1003E2	3	2.8	Not attained	Need to focus on final exam
Metric Spaces and Linear Algebra	DSC-1003F1	3	3.0	attained	
Complex Analysis and Numerical Methods II	DSC-1003F2	3	2.8	Not attained	Need to focus on final exam

PO verification:

PO	Attainment	Level
PO1	2.9	Excellent
PO2	2.8	Excellent
PO3	2.883	Excellent
PO4	2.886	Excellent
PO5	2.8	Excellent

PSO verification:

PSO	Attainment	Level
PSO1	2.890	Excellent
PSO2	2.901	Excellent
PSO3	2.897	Excellent
PSO4	2.847	Excellent
PSO5	2.878	Excellent



S.P. Patankar

**(S.P. PATANKAR)
HEAD**

**DEPARTMENT OF MATHEMATICS
VIVEKANAND COLLEGE, KOLHAPUR
(AUTONOMOUS)**

Vivekanand College, Kolhapur (Autonomous)
Department of Mathematics
CO/PO/PSO attainment calculation
B.Sc. III
(Year 2020-2021)

PO's:

PO1: To acquire knowledge with facts.

PO2: To acquire the skills in handling scientific instruments.

PO3: To develop scientific outlook with respect to science subject.

PO4: To analyse the given scientific data critically and systematically.

PO5: To realize ethical moral and social values in personal and social life.

PSO's:

PSO1: Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.

PSO2: Acquire good knowledge and understanding advanced areas of mathematics chosen by students from given course.

PSO3: Students should be able to recall basic facts about mathematics and train the students to extract information, formulate and solve problems in systematic and logical manner.

PSO4: Students will learn numerical aptitude applying both qualitative and quantitative knowledge for their further career

PSO5: Students learn how to apply mathematical concepts to practical and real-life problems.

Course I: Real analysis and Modern Algebra (DSC -1003 E1)

CO1: Understand The characteristics of set of real number.

CO2: Learn Sequence and series of real numbers and their properties.

CO3: Use the ratio, root, alternating series and limit comparison test for convergence and absolute convergence of infinite series of real numbers

CO4: Learn Riemann Integral and Improper Integral.

CO5: Understand an algebraic structures Group and ring.

CO6: Understand Properties and terminologies related to Group and Ring.

CO7: Apply fundamental theorem, Isomorphism theorems of groups to prove these theorems for Ring.

CO8: Recognize the mathematical objects that are group and classify them as abelian, cyclic and permutation group

Course II : Matrix Algebra and Numerical Methods-I (DSC -1003 E2)

CO1: Learn Terminologies related with matrices.

CO2: To solve system of homogeneous and non-homogeneous equations

CO3: Calculate eigen values and corresponding eigen vectors of square matrix

CO4: Calculate the translation, dilation, rotation of point, line and plane by using matrices

CO5: Use approximate numerical methods and determine the solutions to give non-linear equations

CO6: Use appropriate numerical methods and determine approximate solutions to systems of linear equations and ordinary differential equations.

CO7: Learn numerical methods to calculate eigen value

CO8: Learn numerical method to find solution of system of equations

Course III : Metric Spaces and Linear Algebra

(DSC-1003 F1)

CO1: Learn Metric spaces and its different types.

CO2: Apply the notion of metric space to continuous functions on metric spaces

CO3: Demonstrate the properties of continuous function on metric space

CO4: Understand the basic concepts of connectedness, completeness and compactness of metric space

CO5: Understand the concept of Vector spaces and operators on them.

CO6: Learn properties of Inner product spaces

CO7: Learn basic concept of linear transformation, dimension theorem

CO8: Familiarize characteristic roots and characteristic vectors.

Course IV: Complex Analysis and Numerical Methods-II(DSC -1003F2)

CO1: Familiarize with Basic concepts of functions of theory of functions of complex variable.

CO2: Learn Differentiation and Integration of complex valued functions

CO3: Apply Cauchy integral formula to calculate integrals

CO4: Represent functions as Taylor, power and Laurent series, classify singularities and poles, find residues and evaluate complex integrals using the residue theorem

CO5: Use appropriate numerical methods to evaluate the integration

CO6: Demonstrate the use of interpolation methods to find intermediate values in given graphical and/or tabulated data for unequally spaced data

CO7: Demonstrate the use of interpolation methods to find intermediate values in given graphical and/or tabulated data for equally spaced data

CO8: Learn to find the solutions of ordinary differential equations by Euler, Taylor and Runge Kutta Method.

Articulation matrix for

Course I: (DSC -1003E1)

Outcomes	P01	P02	P03	P04	P05	PS01	PS02	PS03	PS04	PS05
C01	2	0	1	1	0	0	2	3	1	1
C02	2	0	1	1	0	1	3	3	1	2
C03	2	0	1	1	0	0	3	2	0	1
C04	2	0	0	1	0	1	2	2	1	1
C05	2	0	1	1	0	1	2	2	0	3
C06	2	0	1	1	0	1	3	3	0	2
C07	2	0	1	1	0	0	2	2	1	1
C08	2	0	1	1	0	0	3	2	1	1
Average	2	0	0.875	1	0	0.5	2.5	2.375	0.625	1.5

Course II: (DSC -1003E2)

Outcomes	P01	P02	P03	P04	P05	PS01	PS02	PS03	PS04	PS05
C01	2	0	1	1	0	1	3	2	2	2
C02	2	0	1	1	0	1	2	3	1	2
C03	2	0	1	1	0	0	2	2	0	2
C04	2	1	1	1	0	1	2	3	2	2
C05	2	1	2	1	1	1	2	2	2	3
C06	2	1	2	1	0	1	2	3	2	2
C07	2	0	2	1	0	1	3	2	2	2
C08	2	1	1	1	0	1	3	2	1	2
Average	2	0.5	1.375	1	0.125	0.875	2.375	2.375	1.5	2.125

Course III: (DSC -1003F1)

Outcomes	PO1	PO2	PO3	PO4	PO5	PS01	PS02	PS03	PS04	PS05
C01	2	0	1	0	0	1	2	3	0	1
C02	2	0	1	0	0	1	3	3	0	1
C03	2	0	1	0	0	1	2	3	0	1
C04	2	0	0	1	0	1	3	2	0	2
C05	2	0	1	1	0	1	2	2	0	1
C06	2	0	1	0	0	1	3	2	0	1
C07	2	0	1	1	0	1	2	3	0	1
C08	2	0	1	1	0	0	3	2	1	1
Average	2	0	0.875	0.5	0	0.875	2.5	2.5	0.125	1.125

Course IV: (DSC -1003F2)

Outcomes	PO1	PO2	PO3	PO4	PO5	PS01	PS02	PS03	PS04	PS05
C01	2	0	1	1	0	1	2	3	2	2
C02	2	0	1	1	0	1	3	3	1	2
C03	2	0	1	1	0	0	3	2	0	1
C04	2	1	1	1	0	1	2	3	2	2
C05	2	1	2	1	1	1	3	3	1	2
C06	2	0	2	1	0	1	3	3	2	2
C07	2	0	1	1	0	0	2	2	1	2
C08	2	1	2	1	1	1	3	3	2	3
Average	2	0.375	1.25	1	0.25	0.75	2.625	2.75	1.375	2

Year 2020-21 Students Marklist

Roll No.	Name	SEM V				SEM VI			
		DSC-1003E1		DSC-1003E2		DSC-1003F1		DSC-1003F2	
		(CA)	(CIE)	(CA)	(CIE)	(CA)	(CIE)	(CA)	(CIE)
8102	AMATE PUNAM VITTHAL	68	20	80	20	80	20	80	20
8103	BAUDANE SANJAY BARAKU	68	19	80	19	24	20	64	20
8104	BENDAKE MUKTA VIKAS	80	20	76	20	60	20	80	20
8105	CHILAK KALPAK ANIL	40	20	80	20	36	20	76	20
8106	CHIOKAKKAR VIRAJ VIRAJ	60	20	80	20	44	20	76	20
8107	CHOUDARY RUCHITA PRALHADRAY	76	20	80	20	72	20	80	20
8108	CHOUGALE PRIYANKA BAJIRAO	68	20	80	20	76	20	76	20
8109	CHOUGALE TEJSWINI BAJIRAO	68	19	80	19	60	19	80	20
8110	CHOUGULE ABHINANDAN MAHAVEER	56	20	80	20	52	20	80	20
8111	DALAVI PANDURAG NARAYAN	52	20	80	20	32	20	72	20
8112	DESAI VIKRAM JAYARAM	52	20	80	20	48	20	68	20
8113	DEVARDEKAR UNMESHA SUNIL	68	20	80	20	72	20	80	20
8114	GAIKWAD AMRITA PRAKASH	44	20	80	20	68	20	68	19
8115	GAWADE VINAYAK ARJUN	56	20	80	20	80	20	80	20
8116	GOTKHINDE SHRUTIKA BHARAT	52	20	80	20	68	20	80	20
8117	JADHAV DIGVIJAY SURESH	52	20	80	20	64	20	80	20
8118	JOSEF SUSEN LIVIS	60	20	80	20	24	19	76	19
8119	KAMBLE DIGVIJAY PANDURANG	52	20	80	20	64	19	68	20
8120	KAMBLE PRATIRAJ PRAKASH	56	20	80	20	60	20	76	20
8121	KAMBLE SHIVANI SHANKAR	68	18	80	19	32	20	68	20
8122	KARALE SHUBHAM MANSING	44	20	80	20	68	20	80	20
8123	KHAMBE MANISHA MADHUKAR	72	20	80	20	76	19	80	20
8124	KHANDEKAR SANDIP SUKUMAR	48	20	80	20	44	20	76	20
8125	KHOT AKASH BALASO	56	20	80	20	44	19	76	19
8126	KHUDE GOURI ANGAD	64	20	80	20	44	19	80	18
8127	KODAG SNEHA SHIVANI	68	19	80	19	60	20	76	20
8128	KUMBHAR AKSHAY DADASO	64	20	80	20	80	20	80	20
8129	KUMBHAR PRATIKSHA APPASO	56	19	60	19	64	20	72	19
8130	MAGAR SHWETALI SUBHASH	80	20	68	20	40	20	80	20
8131	MANKAPURE PARVEEN MEHAMUD	64	18	80	18	44	20	76	20
8132	MARDANE PRATIKSHA SHRIKANT	52	19	48	18	68	19	68	19
8133	MOTE RAMESH ANNAPA	56	20	80	20	60	20	80	20
8134	NHAVI SHIVANAND BALESH	56	20	80	20	40	20	72	19
8135	NIKAM SNEHA BAJARANG	68	20	80	20	68	20	76	20
8136	NIRMALKAR MAYURI CHANDRAKANT	56	20	80	20	72	20	72	20
8137	PALADIA PRIYANKA SHANTILAL	56	20	80	20	56	20	76	20
8138	PATIL AKANKSHA DHANAJI	72	20	80	20	64	20	80	20
8139	PATIL DEEPALI MAHAVEER	44	19	52	19	28	18	60	18
8140	PATIL DIVYA RAMESH	56	20	80	20	64	20	76	20
8141	PATIL MANSI GAJANAN	40	19	64	19	56	18	64	18

8142	PATIL MAYURI TUKARAM	48	19	64	19	56	18	80	20
8143	PATIL RUTUJA BHANUDAS	56	20	80	20	48	20	80	20
8144	PATIL RUTUJA BHARAT	64	20	80	20	56	20	76	20
8145	PATIL SAURABH DINKAR	56	20	80	20	44	20	80	20
8146	PATIL SHILPA SHIVAJI	64	19	80	19	60	20	80	20
8147	PATIL SAURABH SUHAS	52	20	80	20	64	20	80	20
8148	PATIL SUNITA ASHOK	68	20	80	20	44	20	68	20
8149	POWAR MAYURI PANDURANG	72	20	60	20	64	19	64	18
8150	POWAR VAISHNAVI SHANKAR	48	20	80	20	72	20	80	20
8151	RAGHANI RITIK DINESH	56	20	80	20	28	20	76	20
8153	SARDESAI RUTUJA RAHUL	52	20	72	20	48	20	76	20
8154	SASAWADE SHIVANI BHIKAJI	60	19	80	19	48	19	76	19
8155	SAVANT KOMAL ANIL	36	19	72	19	32	20	44	20
8156	SAWANT SWATI AJIT	60	19	80	19	32	20	72	20
8157	SHARMA ANKITA RAVIRAJI	72	20	76	20	80	20	80	20
8158	SHINDE MANISHA APPASAHEB	68	20	80	20	52	20	80	20
8159	SHINDE PRAJAKTA RAMCHANDRA	64	20	80	20	72	20	80	20
8160	TANDALE PURVA SHIRISH	68	20	80	20	64	20	80	20
8161	VALUNJ AMARJA DIGAMBAR	64	20	80	20	52	19	76	18

FEEDBACK FORM QUESTIONS:

Q.1 How do you rate the syllabus of the courses that you have studied in relation to the capability expected out of the course?

Q.2. How do you rate the usefulness of the units in the syllabus relevant to the course?

Q.3. How do you rate the weightage of the credits to the courses

Q.4. How do you rate the offering of electives in terms of their quality to the specialization stream?

Q.5. How do you rate the electives offered in relation to technological advancements?

Q.6. Rate the size of the syllabus in terms of the load of the students.

Q.7. Rate the courses in terms of self-learning considering the design of the courses.

Q.8. How do you rate the evaluation scheme designed for each of the courses?

Q.9. How do you rate the objectives stated for each of the course?

Q.10. How do you rate the percentage of the courses having lab components?

Google Link:

[https://docs.google.com/forms/d/e/1FAIpQLSfp26RjsaQiR8GONeIY6rG4wycqV8Fv0CpiM1NzRCC-q5zu9g/viewform?usp=sf link](https://docs.google.com/forms/d/e/1FAIpQLSfp26RjsaQiR8GONeIY6rG4wycqV8Fv0CpiM1NzRCC-q5zu9g/viewform?usp=sf_link)

<https://docs.google.com/forms/d/e/1FAIpQLSeuTPEU3K3AAeth02LXxMnK2Z2YfCcfDZ66tZk67O95-66H0A/viewform?usp=sf link>

Excellent: 5

Very Good: 4

Good: 3

Average: 2

Poor: 1

B.Sc.III Sem V(DSC-1003E1)

Roll No.	Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Q.7	Q.8	Q.9	Q.10
8102	2	5	3	3	3	3	2	3	3	3
8103	3	5	3	3	3	5	3	3	3	3
8104	3	5	3	4	3	5	2	2	3	3
8105	3	5	3	4	2	5	4	3	4	4
8106	3	5	3	3	3	5	3	3	3	2
8107	3	5	3	5	4	5	3	3	3	3
8108	3	5	3	3	2	5	3	4	4	2
8109	3	5	3	4	4	5	3	3	3	4
8110	3	5	2	3	3	2	3	2	3	3
8111	3	5	3	3	2	5	3	2	3	2
8112	3	5	5	3	4	5	5	3	4	5
8113	4	4	3	2	3	5	5	3	3	5
8114	4	4	4	3	4	5	3	4	4	3
8115	4	4	4	4	4	3	4	4	4	4
8116	4	4	3	5	4	5	4	4	4	4
8117	4	4	2	3	2	5	5	3	2	1
8118	4	4	4	4	3	5	3	3	3	4
8119	4	4	4	5	5	5	3	5	4	3
8120	4	4	5	5	5	5	4	5	5	5
8121	4	4	3	4	5	5	3	5	4	3
8122	4	4	4	3	4	5	5	4	4	3
8123	4	4	4	5	4	5	5	4	5	5
8124	5	4	4	5	4	5	5	5	5	5
8125	5	4	4	4	4	5	4	4	3	3
8126	5	4	4	5	5	5	4	5	4	5
8127	5	4	4	5	4		5	5	4	5
8128	5	4	5	5	5	5	5	5	5	5
8129	5	4	4	3	4	5	4	3	4	3
8130	5	3	4	5	5	5	4	4	4	4
8131	5	3	4	4	5	5	5	5	4	5
8132	5	3	5	4	4	5	5	4	3	3
8133	5	3	5	5	5	5	5	5	5	5
8134	5	3	4	4	5	5	5	4	4	4
8135	5	3	5	4	5	5	5	5	5	4
8136	5	3	4	4	5	5	5	5	5	4
8137	5	3	5	4	4	5	4	5	5	4
8138	5	3	5	5	5	4	4	5	4	5
8139	5	2	5	5	4	5	4	5	4	5
8140	5	2	3	5	4	5	3	5	4	4
8141	5	2	3	4	5	5	3	3	4	5

B.Sc.III Sem V(DSC-1003E2)

Roll No.	Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Q.7	Q.8	Q.9	Q.10
8102	5	5	4	3	3	5	5	2	4	3
8103	5	5	5	5	5	5	5	5	5	5
8104	4	5	4	5	4	5	4	4	4	5
8105	4	5	4	5	5	5	5	5	5	4
8106	5	5	5	5	5	5	5	5	4	5
8107	3	4	5	4	5	5	5	4	5	4
8108	3	3	4	3	3	5	3	3	4	2
8109	4	4	4	4	4	5	4	4	4	4
8110	4	3	3	3	3	5	3	4	3	3
8111	4	4	5	5	5	5	3	2	3	4
8112	5	5	5	5	5	5	5	5	5	5
8113	4	4	4	4	4	5	4	4	4	4
8114	4	3	4	5	3	5	4	4	4	4
8115	3	3	3	3	2	5	4	3	2	3
8116	4	3	2	3	4	5	3	1	1	2
8117	3	3	3	4	3	5	3	4	3	4
8118	5	5	5	5	5	5	5	5	5	5
8119	3	3	3	3	1	4	3	2	2	3
8120	5	4	3	5	4	5	4	4	5	4
8121	4	3	3	4	3	5	3	3	3	4
8122	5	5	5	5	5	5	5	5	5	5
8123	5	4	5	4	5	5	5	5	5	4
8124	2	2	3	2	3	5	2	2	3	3
8125	4	5	5	4	5	3	4	5	5	5
8126	5	5	5	5	4	5	5	4	5	4
8127	5	4	5	5	4	5	5	5	4	4
8128	5	5	4	5	4	5	4	5	5	4
8129	5	4	5	5	5	5	4	5	4	5
8130	5	4	5	4	5	5	5	5	4	5
8131	5	4	4	5	5	5	5	4	4	5
8132	5	4	4	3	3	5	2	2	5	4
8133	5	4	3	2	5	5	4	3	2	5
8134	4	3	2	5	4	5	3	2	5	4
8135	3	2	5	4	3	5	2	5	4	3
8136	2	5	4	3	5	5	4	3	5	4
8137	4	5	3	4	5	5	3	4	5	3
8138	5	4	3	5	4	5	3	5	4	3
8139	4	3	5	4	3	5	5	4	3	5
8140	3	2	5	4	3	5	5	4	3	5
8141	5	4	3	2	5	5	4	3	5	4

B.Sc.III Sem VI (DSC-1003F1)

Roll No.	Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Q.7	Q.8	Q.9	Q.10
8102	3	4	3	3	2	5	4	4	3	5
8103	3	3	3	3	3	5	3	3	3	3
8104	5	5	5	5	5	5	5	5	5	5
8105	5	4	5	4	4	5	4	5	4	4
8106	5	5	4	4	5	5	5	4	5	4
8107	5	4	5	3	5	4	5	4	5	4
8108	5	5	5	5	5	5	4	5	5	5
8109	3	3	3	3	3	5	4	4	4	2
8110	4	4	4	4	4	5	4	4	4	4
8111	4	3	3	4	3	5	3	3	4	3
8112	4	4	3	5	4	3		5	2	4
8113	3	3	3	3	3	4	3	3	3	3
8114	5	4	4	4	4	5	3	4	5	4
8115	5	3	3	2	2	3	3	3	3	3
8116	4	4	4	3	2	5	3	3	3	3
8117	4	4	3	3	3	5	3	4	3	4
8118	4	3	3	4	3	5	3	3	4	4
8119	3	4	2	5	4	5	3	3	3	4
8120	3	5	3	4	2	5	1	3	2	1
8121	5	4	5	3	4	5	4	4	5	4
8122	4	4	5	4	3	4	3	3	3	4
8123	5	5	5	5	5	5	5	5	5	5
8124	2	2	3	3	2	5	2	3	3	3
8125	5	4	5	3	5	5	4	5	5	4
8126	5	4	5	4	5	5	5	5	5	4
8127	3	3	4	3	4	5	3	3	4	4
8128	5	5	4	5	5	5	5	4	4	5
8129	5	4	5	5	4	5	5	5	4	5
8130	5	5	5	4	5	5	4	4	5	5
8131	5	5	4	5	5	5	4	5	5	4
8132	2	4	4	5	5	5	5	5	4	5
8133	5	5	4	4	5	5	4	4	5	5
8134	5	5	4	5	5	5	4	4	5	5
8135	5	4	3	2	5	5	4	3	2	5
8136	4	3	2	5	4	5	3	2	5	4
8137	3	2	5	4	3	5	2	5	4	3
8138	2	5	4	3	2	5	5	4	3	2
8139	5	3	4	2	5	5	3	4	2	5
8140	4	2	5	3	4	5	2	5	3	4
8141	3	5	2	4	3	5	5	2	4	3

B.Sc.III Sem VI (DSC-1003F2)

Roll No.	Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Q.7	Q.8	Q.9	Q.10
8102	5	5	5	5	5	5	5	5	5	5
8103	4	4	3	3	3	5	3	3	3	3
8104	4	4	4	3	5	5	3	4	2	4
8105	4	5	3	5	5	5	4	4	5	4
8106	5	5	4	4	5	5	4	4	5	5
8107	5	4	5	4	5	5	5	4	4	5
8108	5	4	4	3	3	5	4	2	5	5
8109	3	3	3	3	3	5	3	3	4	2
8110	3	5	5	5	4	4	5	3	4	5
8111	4	4	3	5	3	5	4	3	3	4
8112	4	3	3	4	3	5	3	3	3	4
8113	4	4	4	4	4	5	4	4	4	5
8114	3	4	4	3	3	5	4	4	4	4
8115	3	3	4	5	2	5	3	3	3	4
8116	4	3	2	2	4	5	3	2	2	1
8117	5	4	5	5	4	5	4	5	4	3
8118	3	3	3	3	3	5	4	3	2	3
8119	4	3	3	4	3	5	3	3	3	4
8120	5	5	5	5	5	5	5	5	5	5
8121	5	5	5	5	5	5	5	4	4	4
8122	5	4	5	5	4	5	4	4	5	4
8123	5	4	5	5	4	5	5	4	5	5
8124	5	5	4	5	4	5	5	4	5	5
8125	5	4	5	4	5	5	5	4	5	4
8126	5	4	5	5	5	5	4	5	4	5
8127	5	4	5	4	5	5	4	5	4	5
8128	5	5	4	5	4	5	5	4	5	5
8129	5	4	5	5	4	4	5	5	4	5
8130	4	4	4	4	4	5	4	4	4	4
8131	5	4	3	2	5	5	4	3	2	5
8132	3	3	3	3	3	5	3	3	3	3
8133	5	5	5	5	5	5	5	5	5	5
8134	4	3	2	5	4	5	3	2	5	4
8135	5	4	3	5	4	5	3	5	4	3
8136	3	2	5	4	3	4	5	4	3	2
8137	3	4	5	3	4	5	5	3	4	5
8138	3	2	5	4	3	5	3	2	5	3
8139	4	5	4	5	4	5	5	4	5	4
8140	4	3	5	4	3	5	2	5	4	3
8141	3	4	4	3	3	5	4	4	3	4