Registration No.....

Bhartiya Skill Development University

School of General Education

II In-Semester Examination- Nov., 2018

Summer Semester, Sem-I (2018-19), B.Voc. Program

Course: English Language & Comprehension **Time: 1 Hour**
Course Code: GEN1101

Max. Marks: 20

Instructions: The question paper comprises three sections A, B & C. Marks allotted are mentioned against each section.

Section-A (1*5=5)

Q1. State the comparative degree of the following words:

(a) Tall
(b) Beautiful

Q2. Select the right form of the verbs to fill in the blanks:

(a) The girl _____ the song. (sing/sang)
(b) Rohan_____ from school at 4 p.m. everyday. (returns/is returning)

Q3. Write the homophones for the following words:

(a) New
(b) Week

Q4. What was the name of Helen Keller's teacher?

Q5. Arrange the following jumbled words in a proper sentence:

(a) thought that/her parents/teacher/they should/for her/find a.
(b) lived/in a /Rip Van Winkle/in North America/small village.

Section- B (2*3=6)

Q 6. Explain the following lines with reference to the context:

"Something is very wrong."

Q 7. What did Helen do when she began to grow wild?

Q 8. Why did everyone like Rip Van Winkle?

Section- C (3*3=9)

Q 9. Write the summary of 'Helen Keller.'

Q 10. Write your daily routine in about ten sentences. (use simple present tense)

Q 11. Make sentences with the following words:

(a) old
(b) village
(c) special
(d) important
(e) white
(f) dirty

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Summer Semester, Sem-I (2018-19), B.Voc. Program

Answer key

Course: English Language & Comprehension **Time: 1 Hour**
Course Code: GEN1101

Max. Marks: 20

Instructions: The question paper comprises three sections A, B & C. Marks allotted are mentioned against each section.

Section-A **(1*5=5)**

Q1. (a) Taller
(b) More Beautiful

Q2. (a) Sang
(b) returns

Q3. (a) Knew
(b) Weak

Q4. (a) Miss Sullivan
(b) Catskill Mountains

Q5. (a) Her parents thought that they should find a teacher for her.
(b) Rip Van Winkle lived in a small village in North America.

Section- B **(2*3=6)**

Q 6. From Helen Keller. Said by Helen's mother when Helen began to grow lived after her illness.

Q 7. She did not allow anyone to comb her hair. She was dirty. She kicked her feet.

Q 8. He was kind and good. Helpful. Told stores to children.

Section- C **(3*3=9)**

Q 9. Helen Keller became blind and deaf after illness. She became unhappy and behaved wildly. Her parents arranged Miss Sullivan as her teacher. She taught her the meanings of words by writing on her hand.

Q 10. I study in B.S.D.U. I stay in the hostel. I study in the School of Carpentry. I go to college at 9 a. m. My hobbies playing cricket and football.

Q 11.

(a) This is an old book.
(b) I live in a village.
(c) Today is a special day.
(d) This work is important.
(e) I have a white shirt.
(f) This place is dirty.

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Question Paper

School of General Education

1st Semester, 2nd In-Sem. Examination

B. Voc. Program, Summer Semester (2018-19)

Course Code: GEN 1103 **Time: 1 Hour**

Course Name: Applied Mathematics **Max. Marks: 20**

Instruction:

1. All questions are compulsory.
2. Missing data if any can be suitably assumed.

Section – A

$05 \times 01 = 05$ Marks

Q1. $\lim_{x \to 3} 3x(x+1) =$

(A) 10 (C) 0

(B) 36 (D) 25

Q2. $\lim_{x \to 1} x^2 + 4x + 6 =$

(A) 11 (C) 15

(B) 10 (D) 0

Q3. $\frac{d}{dx}(x^n) =$

(A) $2nx^{n-1}$ (C) x^{n-1}

(B) nx^{n-1} (D) 1

Q4. $\frac{d}{dx}(5) =$

(A) 1 (C) 0

(B) 5 (D) x

Q5. $\int \frac{1}{x} dx =$

(A) 1 (C) $\log x$

(B) 0 (D) $\sin x$

Section – B

$03 \times 02 = 06$ Marks

Q6. Evaluate $\lim_{x \to 1} \frac{x^2 + 2 + 5ax^3}{x^4}$.

Q7. If $y = (2x^3 + 5b + 8x^5)(ax^2 + 2ab)$ then find the derivative $\frac{dy}{dx}$.

Q8. Evaluate $\int (e^x + x^2) dx$.

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Section – C

$03 \times 03 = 09$ Marks

Q9. Evaluate $\lim_{x \to a} \frac{\sqrt{a+2x} - \sqrt{3x}}{\sqrt{3a+x} - 2\sqrt{x}}$.

Q10. If $y = \frac{2x^2 - \sin x}{x(1+x^2)}$ then find the derivative $\frac{dy}{dx}$.

Q11. Integrate the following w.r.t. x.

$$\int \frac{1+x-x^2}{\sqrt{x}} dx .$$

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School of General Education

1st Semester, 2nd In-Sem. Examination

B. Voc. Program, Summer Semester (2018-19)

Course Code: GEN 1103 **Time: 1 Hour**

Course Name: Applied Mathematics **Max. Marks: 20**

Section A

Q1. (B)

Q2. (A)

Q3. (B)

Q4. (C)

Q5. (C)

Section B

Q6. Given

$$\lim_{x\to 1}\frac{x^2+2+5ax^3}{x^4} \text{ (not in 0/0 form)}$$

Hence $\lim_{x\to 1}\frac{x^2+2+5ax^3}{x^4} = \frac{1^2+2+5a(1^3)}{1^4} = 3+5a$

Q7. Given

$$y=(2x^3+5b+8x^5)(ax^2+2ab)$$

Applying chain rule formula which is $\frac{d}{dx}(u.v) = v\frac{d}{dx}u + u\frac{d}{dx}v$

$$\frac{dy}{dx} = (ax^2+2ab)(6x^2+40x^4)+(2x^3+5b+8x^5)(2ax)$$

$$\frac{dy}{dx} = 6ax^4+40ax^6+12abx^2+80abx^4+4ax^4+10abx+16ax^6$$

$$\frac{dy}{dx} = 10ax^4+56ax^6+12abx^2+80abx^4+10abx$$

Q8. Given

$$\int(e^x+x^2)dx.$$

$$=\int(e^x+x^2)dx.$$

$$=\int e^x dx+\int x^2 dx = e^x+\frac{x^3}{3}+c$$

Q9. Given

$$\lim_{x\to a}\frac{\sqrt{a+2x}-\sqrt{3x}}{\sqrt{3a+x}-2\sqrt{x}}$$

$$= \lim_{x\to a}\frac{\sqrt{a+2x}-\sqrt{3x}}{\sqrt{3a+x}-2\sqrt{x}}\times\frac{\sqrt{a+2x}+\sqrt{3x}}{\sqrt{a+2x}+\sqrt{3x}}$$

$$= \lim_{x\to a}\frac{a+2x-3x}{(\sqrt{3a+x}-2\sqrt{x})\sqrt{a+2x}+\sqrt{3x}} = \lim_{x\to a}\frac{a-x}{(\sqrt{3a+x}-2\sqrt{x})\sqrt{a+2x}+\sqrt{3x}}\times\frac{\sqrt{3a+x}+2\sqrt{x}}{\sqrt{3a+x}+2\sqrt{x}}$$

$$= \lim_{x\to a}\frac{a-x\left(\sqrt{3a+x}+2\sqrt{x}\right)}{(3a+x-4x)\sqrt{a+2x}+\sqrt{3x}} = \lim_{x\to a}\frac{(a-x)\left(\sqrt{3a+x}+2\sqrt{x}\right)}{3(a-x)\sqrt{a+2x}+\sqrt{3x}}$$

$$= \lim_{x\to a}\frac{\left(\sqrt{3a+x}+2\sqrt{x}\right)}{3(\sqrt{a+2x}+\sqrt{3x})} = \frac{\left(\sqrt{3a+a}+2\sqrt{a}\right)}{3(\sqrt{a+2a}+\sqrt{3a})} = \frac{\left(\sqrt{4a}+2\sqrt{a}\right)}{3(\sqrt{3a}+\sqrt{3a})} = \frac{4\sqrt{a}}{6\sqrt{3a}} = \frac{2\sqrt{a}}{3\sqrt{3a}} = \frac{2}{3\sqrt{3}}$$

Q10. Given $y = \dfrac{2x^2-\sin x}{x(1+x^2)} = \dfrac{2x^2-\sin x}{x+x^3}$

$$\frac{dy}{dx} = \frac{(x+x^3)\frac{d}{dx}(2x^2-\sin x)-(2x^2-\sin x)\frac{d}{dx}(x+x^3)}{(x+x^3)^2}$$

$$\frac{dy}{dx} = \frac{(x+x^3)(4x-\cos x)-(2x^2-\sin x)(1+3x^2)}{(x+x^3)^2}$$

$$\frac{dy}{dx} = \frac{4x^2-x\cos x+4x^4-x^3\cos x-2x^2-6x^4+\sin x+3x^2\sin x}{(x+x^3)^2}$$

$$\frac{dy}{dx} = \frac{2x^2-2x^4-\cos x(x+x^3)+\sin x(1+3x^2)}{(x+x^3)^2}$$

Q11. Given $\int\frac{1+x-x^2}{\sqrt{x}}dx$

$$= \int\left(\frac{1}{\sqrt{x}}+\frac{x}{\sqrt{x}}-\frac{x^2}{\sqrt{x}}\right)dx$$

$$= \int\frac{1}{\sqrt{x}}dx+\int\frac{x}{\sqrt{x}}dx-\int\frac{x^2}{\sqrt{x}}dx$$

$$= \int x^{-1/2}dx+\int x^{1/2}dx-\int x^{3/2}dx$$

$$= \frac{x^{-1/2+1}}{-\frac{1}{2}+1}+\frac{x^{1/2+1}}{\frac{1}{2}+1}-\frac{x^{3/2+1}}{\frac{3}{2}+1}+c$$

$$= 2x^{1/2}+\frac{2x^{3/2}}{3}-\frac{2x^{5/2}}{5}+c$$

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Question Paper

School of General Education

1st Semester, 2nd In-Sem. Examination

B. Voc. Program, Summer Semester (2018-19)

Course Code: GEN 1104 **Time: 1 Hour**

Course Name: Elementary Mathematics **Max. Marks: 20**

Instruction:

1. All questions are compulsory.
2. Missing data if any can be suitably assumed.

Section – A

05×01 = 05 Marks

Q1. How many millimetre is there in 1 cm?

(A) 100 (C) 0.1

(B) 10 (D) 0.001

Q2. Convert 13 meters 54 cm into centimeter

(A) 1355 (C) 1354

(B) 13.54 (D) 13540

Q3. How many kilometers are there in 1 meter?

(A) 1000 (C) 0.01

(B) 0.001 (D) 0.1

Q4. Convert 1875 grams = __Kg__grams

(A) 1 Kg 875 grams (C) 18 kg 75 grams

(B) 75 Kg 18 grams (D) 187 Kg 5 grams

Q5. How many inches into 7.5 feet?

(A) 75 (C) 90

(B) 900 (D) 12

Section – B

03×02 = 06 Marks

Q6. Find the sum of the followings:

(i) 32 meters and 56 cm

(ii) 25 cm 05 mm and 16 cm 03 mm

Q7. Convert binary numbers into decimal numbers:

(i) 1100

(ii) 1111

Q8. Convert decimal numbers into binary numbers:

(i) 174

(ii) 168

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Section – C

$03 \times 03 = 09$ Marks

Q9. Anjali has 217 grams of wheat, she has to divide it equally among her 4 friends, how much quantity of wheat will each of them will get. Also determine the remaining quantity of wheat.

Q10. The cost of 25 liters 750 ml of milk is rupees 625. Calculate the cost of 1 ml of milk. Also determine the cost of 32 ml milk.

Q11. Raj travelled 6 Km 35 meters by train, 7 Km 54 meters by car and remaining by bus. Total distance travelled by him is 35 Km, calculate how much distance is travel by him by bus.

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of General Education

1st Semester, 2nd In-Sem. Examination

B. Voc. Program, Summer Semester (2018-19)

Course Code: GEN 1104 **Time: 1 Hour**

Course Name: Elementary Mathematics **Max. Marks: 20**

Section – A

05×01 = 05 Marks

Q1. (B)

Q2. (C)

Q3. (B)

Q4. (A)

Q5. (C)

Section – B

03×02 = 06 Marks

Q6.

(i) 32 meters and 56 cm

Solution: We know that 1 meter = 100 centimetre

Hence 56 centimetre = 56/100 meter = 0.56 meter

So 32 + 0.56 = 32.56 meters

(ii) 25 cm 05 mm and 16 cm 03 mm

Solution: 25 cm 05 mm + 16 cm 03 mm = 41 cm 08 mm

Q7.

(i) 1100

Solution: Given binary number = 1100

The decimal number is equal to the sum of binary digits (d_n) times their power of 2 (2^n):

$1100 = (1 \times 2^3) + (1 \times 2^2) + (0 \times 2^1) + (0 \times 2^0) = 12$

(ii) 1111

$1111 = (1 \times 2^3) + (1 \times 2^2) + (1 \times 2^1) + (1 \times 2^0) = 15$

Q8.

(i) Convert 174_{10} to binary:

Division by 2	Quotient	Remainder
174/2	87	0
87/2	43	1

43/2	21	1
21/2	10	1
10/2	5	0
5/2	2	1
2/2	1	0
1/2	0	1

So $174_{10} = 10101110_2$

(ii) Convert 168_{10} to binary:

Division by 2	Quotient	Remainder
168/2	84	0
84/2	42	0
42/2	21	0
21/2	10	1
10/2	5	0
5/2	2	1
2/2	1	0
1/2	0	1

So $168_{10} = 10101000_2$

Section – C

$03 \times 03 = 09$ Marks

Q9. Anjali has 217 grams of wheat, she has to divide it equally among her four friends, how much amount of wheat will each of them will get. Also determine the remaining amount of quantity of wheat.

Solution: Anjali has 4 four friends, so = 217/4 = 54 with 1 reminder

Hence, each friend got 54 grams wheat, and the remaining amount of quantity of wheat is 1 gram.

Q10. The cost of 25 liters 750 ml of milk is rupees 625. Calculate the cost of 1 ml of milk. Also find the cost of 32 ml milk.

Solution: We know that 1 liter = 1000 millilitre.

25 liters 750 millilitre = $25 \times 1000 + 750 = 25750$ millilitre

Given that the cost of 25750 millilitre = 625 Rs.

So, cost of 1 millilitre is = 625/25750 = 0.024 Rs.

Hence the cost of 32 millilitre is $= 0.024 \times 32 = 0.76$ Rs.

Q11. Raj travelled 6 Km 35 meters by train, 7 Km 54 meters by car and remaining by bus. Total distance travelled by him is 35 Km, calculate how much distance is travel by him by bus.

Solution: Givan

Total Distance = 35 Km

Travelled by train = 6 Km 35 meters = 6 + 0.035 = 6.035 Km

Travelled by car = 7 Km 54 meters = 7 + 0.054 = 7.054 Km

Total distance covered by train and car = 6.035 + 7.054 = 13.089 Km

Hence distance covered by bus is = 35-13.089 = 21.911 Km